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THIS WEEK'S NEWS

UNDER an arrangement which the L.M.B.A. has made with the Ministry of Works, the services of Mr. E. G. Dean, a senior technical officer of the Ministry, have been made available on a part-time basis to L.M.B.A. members. *p.* 406

AT the annual meeting of the Architects' Registration Council, held on March 16, Mr. E. D. Jefferiss-Mathews, O.B.E., F.R.I.B.A., A.R.I.C.S., was elected chairman. *p.* 422

THE RESULTS of the official tests carried out by the Building Research Station show that the noise of trains from Hungerford-bridge has been successfully excluded from the Royal Festival Hall. *p.* 423

A COLOUR SERVICE studio is in operation at Slough, where a team of colour designers is available to offer free advice on suitable colour schemes for buildings of every kind. *p.* 429

MODULAR CO-ORDINATION

IF it were practicable to bar the use of fractions of an inch in building dimensions, we should have modular co-ordination with a modular dimension of 1 in. If, however, in the manufacture of building components we desired appreciably to reduce the large variation in sizes which would be required to suit a 1 in. module, we should increase this dimension as far as possible.

The Report on Modular Co-ordination, issued by the B.S.I. (summarised elsewhere in this issue), shows that this problem is being studied in many countries and that considerable progress has been made in some. Generally the report indicates that a module of 4 in. or 10 cm., which is approximately the same thing, is regarded as acceptable in the United States, Canada, France, Belgium, Russia and Sweden, and that the United States and Russia are investigating the practicability of secondary modular dimensions of from twice to twelve times the unit dimension.

In the United Kingdom the committee who are studying the subject jointly with the other nations have noted that already several building components are made in "preferred sizes" to suit other building units, but they have put forward in their report a case for a sizeable modular dimension related to human measurement rather than a small one associated with building materials and components.

The report offers the suggestion that door openings, passages, stairs, w.c.s and many other elements have minimum sizes derived from the average shoulder width of human beings, and points out that the planning dimension for such elements would be between 33 in. and 48 in. Indication is given that the use of a module is an attractive way of planning even small houses, and also that the larger the building being planned the fewer are the difficulties likely to occur at the drawing-board stage of design.

It also seems obvious from the work of the committee that even the smallest houses can be efficiently planned on any modular grid between 2 ft. 6 in. and 3 ft. 6 in., and their choice of 3 ft. 4 in. as the most suitable dimension appears to be based on "certain qualities of scale and proportion" as compared with similar plans based on a 3 ft. module. The economics of their argument is that the use of 3 ft. 4 in. gives considerable improvement at an additional cost of not more than 0.5 per cent. as compared with the use of 3 ft.

The second main consideration laid down by the committee is that there shall be a minimum dislocation of existing standards and on this point the willing acceptance of a 3 ft. 4 in. module by manufacturers of building material seems far from certain.

Such co-ordination of dimensions as can be detected in existing building products certainly does not coincide with either the large module of 3 ft. 4 in. or the small unit size of 4 in., and it seems obvious that less dislocation would be caused if a 3 ft. module linked with a 3 in. unit dimension was proposed. At the moment, however, in outlining the case, it seems clear that the slightly more spacious planning eventually to be achieved by the 3 ft. 4 in. module is considered of greater importance than a quicker achievement of the principle by linking the proposed module with a "yard-stick" of 3 ft., which would probably be far more acceptable to industry.

The third main consideration laid down is the relationship to modular standards being developed in the United States and Europe. In this respect the closeness of 3 ft. 4 in. to the metre is of obvious value and the small unit dimension of 4 in. agrees with the American module as well as approximating to the popular 10 cm. module of the European countries.

To view the general problem of modular planning in its true light it must be remembered that the investigations of the committee have not yet entered the field of practical application, nor have they discussed the intricate problems of general or particular tolerances which could be allowed to manufacturers without wrecking the ease of assembly which should be the principal advantage of a modular system.

The report points out that it is reasonable to postpone the extensive study of methods of application until "the principles of modular co-ordination have been accepted in general terms and basic modules and their dimensions decided on."

Whether the use of a module and its dimension can be decided upon without very careful study of its application seems to be one of the points upon which the committee invite observations and comments.

NOTES AND NEWS

Festival Hall Acoustics

A CONSIDERABLE part of London's architectural population seemed to be among the audience of 3,000 who, on March 14, provided almost literally the stuffing for a test of the acoustics of the Royal Festival Hall. Mr. Basil Cameron and the London Philharmonic Orchestra gave an unrehearsed programme designed to test a very wide range of symphonic and instrumental music, while the intervals were punctuated (we had almost written punctured) by fusilades of pistol shots delivered for the benefit of B.R.S. who were testing reverberation.

The tests showed that the hall is acoustically very fine. In a large building designed to pay its way, and including a large gallery, it would be unreasonable to expect the acoustics to be uniformly satisfactory. Thus, under the upper tier symphonic music appeared to lack volume, though individual instruments, particularly piano and woodwind, were well heard. We did not listen from the balcony, but had no criticism to make from the seats in the body of the hall. The architects—Mr. Matthew and Dr. Martin and their team, including Mr. Hope Bagenal, the acoustics adviser—and the builders should be well pleased with a hall which, decoratively as well as acoustically, must be unequalled. Some attention needs paying to the ventilation; there were many who complained of undue heat. On the other hand, insulation from external noise and vibration appeared to be completely successful.

Sculpture at Battersea Again

THE DUCHESS OF KENT has accepted the invitation of the London County Council to open the Second International Exhibition of Sculpture in Battersea Park on May 7.

The first exhibition, held by the London County Council three years ago in the same setting of lawns, flowers and trees, was visited by 150,000 people. This year's show will contain 44 works by leading British and overseas sculptors of the last 50 years, each represented by one work chosen by a committee of sculptors and art experts. About half the works will come from private collections in Britain, about nine from France and the rest from Austria, Belgium, Canada, Denmark, Germany, Holland, Italy, Switzerland and the United States of America. There will be figures in bronze, from Meunier's *Docker* and Rodin's *Orpheus* to the new *Standing Figure* by Henry Moore; in stone, from Eric Gill's black Hoptonwood *Deposition* to Wotruba's *Human Cathedral* in limestone; and also in glazed ceramic, in concrete, in iron and in welded steel. Lectures on sculpture, which will be of special interest to visitors to the Exhibition, are to be given at the Royal Institute of British Architects during the summer.

The exhibition will be open to the public from May 8 to mid-September from 10 a.m. to dusk, daily, including Sundays. Admission will be 1s. and season tickets will be available at 5s. Art students, and children under 16 will be admitted at 6d. (season ticket 2s. 6d.) and organised parties of ten or more, by prior arrangement, at 9d. a person.

The A.G.B.I.

THESE INITIALS stand, as many will know, not for a new Government department but for the Artists' General Benevolent Institution, which exists to help artists, their wives, widows and children and so to discharge something of the debt which society owes to the artist. Mr. Howard Robertson, A.R.A., F.R.I.B.A., is one of the stewards for this year's appeal, and we have pleasure in passing on to his brother architects (who are eligible under the fund) his request for help in making this year's collection "a modest festival for those who are now in need, and whose hopes for the future may be monetarily dimmed." Cheques should be made payable to Mr. Robertson and sent to him at 54, Bedford-square, London, W.C.1.

Industrial Architecture

ONE OF THE MOST significant developments from the viewpoint of contemporary architecture, has been the gradual recognition of the value of the "architectural approach" to industrial design. This is exemplified at the R.I.B.A.'s Exhibition of Industrial Architecture, where projects are shown which are the very antithesis of the "Great West-road" era. Good form, studied layout and, most important of all, a genuine regard for the welfare of the worker, are shown; gone is the monumental pomposity of the built-up façade, and the trite act of impressing clients by sheer size is put aside for good manners in site development and scale.

This is a notable achievement, and although factories and other industrial buildings in the "old style" will probably still be built, the pure logic of humanism in industrial buildings is likely in time to become all pervading.

To Further Building Research

FOLLOWING the statement by the president in his inaugural address that the L.M.B.A. proposed to devote increasing attention this year to building research, it was stated after the March meeting of the Council that the L.M.B.A. had now made arrangements with the Ministry of Works by which the services of one of its senior technical officers in the London area would be available on a part-time basis to L.M.B.A. members.

The technical information officer appointed to this position is Mr. E. G. Dean, and he will be available for consultation by individual members, and will visit L.M.B.A. areas and talk to members.

Among Mr. Dean's duties will be the answering of technical problems raised by members, the provision of information about good building practice, and the organisation of periodical lectures and exhibitions. It is hoped that in the course of his work he will obtain considerable knowledge of building problems to which the Ministry's research departments will devote attention.

Mr. Dean takes up his new duties on April 1.

School of Planning Courses

APPLICATIONS are now being considered for the next diploma course of the School of Planning and Research for Regional Development for the 1951-2-3 sessions. All communications should be addressed to the Secretary, School of Planning, 35, Gordon-square, W.C.1.

Professor Richardson's Lectures

THE LECTURE by Professor Richardson, R.A., on "English Art and Architecture, 1751-90" (one of a series of three), reported in our last issue, was delivered before the Royal Institution.

Housing Centre Conference

A CONFERENCE entitled "Housing: the Next Five Years," will be held at the Conference Hall, County Hall, S.E.1, from June 6 to 8 next. Organised by the Housing Centre Trust, 13, Suffolk-street, Haymarket, S.W.1, the agenda covers housing in redevelopment areas, housing costs and problems of the smaller authority, and the housing needs that are not being met, under the chairmanship, respectively, of Professor Sir Patrick Abercrombie, Mr. Reginald Stamp and Sir Richard Acland, M.P. Tours will be made of the "Lansbury" live architecture exhibition, Poplar, and to housing estates in the London area.

Basildon New Town

APPLICATIONS are invited for the post of Deputy Chief Architect, Basildon New Town. Salary £1,200-£1,500 per annum. Details advertised elsewhere in this issue.

Professional Announcements

MESSRS. KENNARD AND LOWE, F. & A.R.I.B.A., F.R.I.C.S., chartered architects and surveyors, have opened new offices at Nos. 19 and 20, Railway Approach, London Bridge, S.E.1. Telephone : HOP 1763-4.

MR. H. S. HAUGHTON, L.R.I.B.A., MR. F. J. CHARLES, F.I.Q.S., and MR. A. J. CULLEY, A.R.I.C.S., practising as H. S. Haughton and Partners, quantity surveyors, at 14, Glenwood-road, Mannamead, Plymouth, and 171, Sidwell-street, Exeter, are taking into partnership as from April 6, next, Mr. A. Haughton, A.R.I.C.S. The title of the firm will remain unchanged.

COMING EVENTS

Tuesday, March 27

L.M.B.A. (SOUTHERN AREA).—Luncheon to be followed by routine business meeting. Cafe Royal, North End, Croydon. 1 p.m.

Wednesday, March 28

VICTORIA AND ALBERT MUSEUM.—"The Great Exhibition of 1851," by Mr. C. H. Gibbs-Smith. V. and A. Museum, South Kensington, S.W.7. 6.15 p.m.

HERIOT-WATT COLLEGE.—Discussion between students attending series of lectures on supervision and testing of concrete work. Heriot-Watt College, Edinburgh.

BRITISH IRON AND STEEL RESEARCH ASSOCIATION.—"Fundamental Studies of Corrosion and their Importance to the Engineer," by Dr. U. R. Evans, F.R.S., Institution of Civil Engineers, Great George-street, S.W.1. 5.30 p.m.

Thursday, March 29

INSTITUTION OF STRUCTURAL ENGINEERS.—"Construction of the Royal Festival Hall," by Messrs. E. Roland Hole and F. C. Eales. 11, Upper Belgrave-street, S.W.1. 6 p.m.

Friday, March 30

INSTITUTE OF REGISTERED ARCHITECTS (LONDON AND HOME COUNTIES BRANCH).—Open forum in "Architecture and the Architect from the Layman's Point of View." Speakers will include Mrs. Joan Robins and Mr. T. Payten Gunton. Royal Society of Arts, John Adam-street, Adelphi, W.C.2. 6.30 p.m.

INSTITUTION OF STRUCTURAL ENGINEERS (MIDLAND COUNTIES BRANCH).—"Solution of Car Parking Problem in Britain and the U.S.A.," by Messrs. W. P. Andrews and P. G. Bowie. James Watt Memorial Institute, Birmingham. 6 p.m.

INSTITUTION OF MECHANICAL ENGINEERS.—A.G.M. I.M.E., Storey's Gate, St. James's Park, S.W.1. 5.30 p.m.

FROM "THE BUILDER" OF 1851

Saturday, March 22, 1851

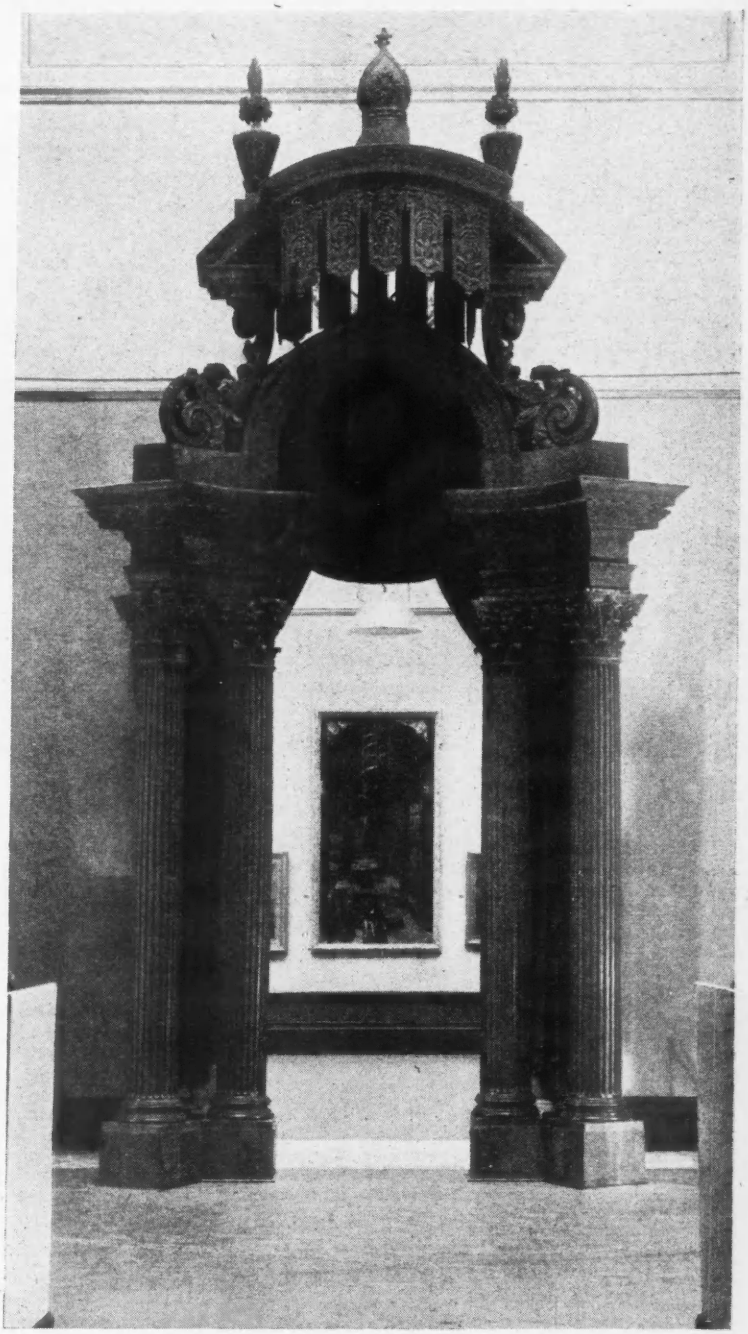
NEW HOSPITAL FOR KING'S COLLEGE.—The corporation of King's College intend making application to Parliament in the present session for a Bill to authorise the purchase of the old burial ground of St. Clement Danes, in Portugal-street, Lincoln's-inn-fields, and to erect thereon a new and enlarged hospital, to accommodate an additional number of patients.

Archibishop Tenison's THRONE, CANTERBURY CATHEDRAL

A Remarkable Work of Reconstruction

ONE of the treasures of Canterbury Cathedral is the throne given by Archbishop Thomas Tenison in 1704. It is a fine example of renaissance design and craftsmanship in oak, the carving being attributed by Gostling in his "A Walk in and about the City of Canterbury" (1777) to Grinling Gibbons, on the authority of "Biographica Britannica." During the bombing of Canterbury in 1942 the throne was overturned by blast and smashed to pieces. The fragments were carefully gathered together and stored in the south-east transept of the Cathedral, pending reconstruction, if such were considered possible. About two years ago this difficult work was undertaken by Messrs. James Longley and Co., Ltd., of Crawley, under the direction of Eric White, a director of the firm; the throne has now been restored and is again in place in the Cathedral. To commemorate this remarkable achievement two volumes, consisting of letterpress recording the history and repair of the throne, together with progress and other record photographs, have been prepared and deposited in the Cathedral Library, together with the original working drawings on which the reconstruction has been based. From this material the accompanying illustrations have been taken and the following notes prepared by courtesy of the Dean and Chapter.

The throne has had a chequered history, for in 1828 it was removed from its position on the south side of the choir, and in 1892 it was re-erected as an organ case in the south-east transept. It was reconstituted as a throne, as an exhibit in the 1938 Royal Academy exhibition of seventeenth-century art in Europe, afterwards resuming its function as an organ case. Then came its destruction in 1942, and now its remaking and repair.

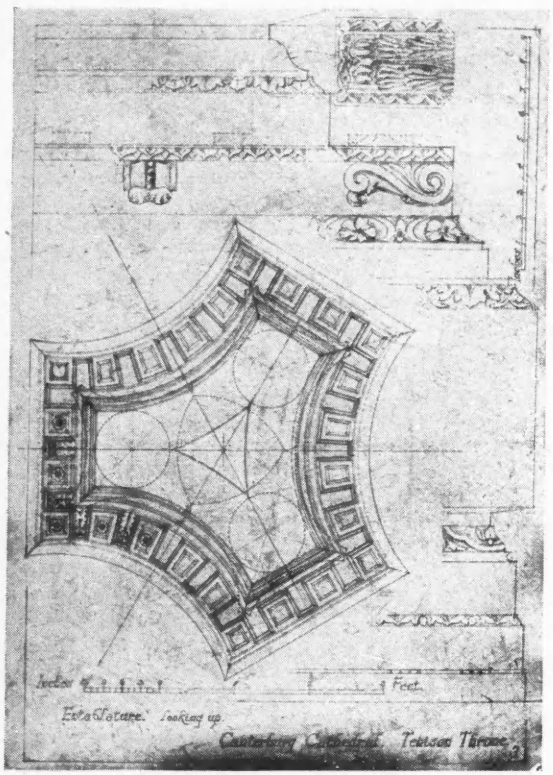


The throne as exhibited at the R.A. exhibition of seventeenth-century art in Europe, in 1938

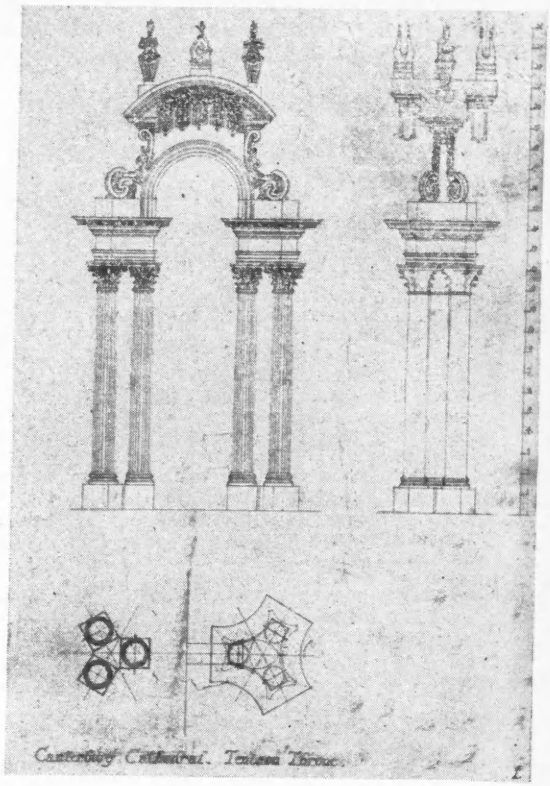
General Description

First of all, a few general descriptive notes on the design, construction and condition of the throne. The present *box bases* are about one foot in height, and it is thought that they either existed before the throne became an organ case or were made up from old material. They are not the original bases, as Dart, in his "Canterbury Cathedral" (1728), shows bases at least 2 ft. 6 in. high. The *prayer desk*, with consoles, panelling and mouldings, shown in Dart, has disappeared. The six *columns* are curiously formed, being coopered, that is, made with staves such as are used in the construction of casks. Two of the six are more robust and of better workmanship than the others, though their construction is similar. It is thought that the carving of the acanthus and caulicolus on two of the capitals may be the work of Gibbons. The *cornices* are almost identical, though differing slightly in dimensions. The carved mouldings are particularly refined, with three straight sides and three curved. The curves of the various mouldings are struck from different centres so that the distance at the centre of the curves is deeper than at the ends. All the modillions and paterae were missing. The *blocking courses and arch* appear to be by the same hand as the cornices. The *consoles*, well carved but mutilated, are somewhat older than the rest of the throne and may come from some other work; the flower and leaf motives are reminiscent of Gibbons's work at St. Paul's. The *pediment* is of good design and well executed, but is heavier in detail than the cornices below it. The dentil and attendant mouldings are completely interrupted at the point where the pediment is broken and do not return to the inner sides. The *valances* are shown in Dart's illustration so they must be an original feature: there are five panels on the outward sides and two on each return. Half this number have been carved out of wood of a similar quality, but the carving is by different hands. The other panels are spurious and one bears a nineteenth-century date. *The cresting* consists of two mitres and two vases, the former being almost identical with Gibbons's mitres on the throne at St. Paul's and are either his work or that of a gifted pupil.

After a close study of the throne, the conclusion was reached that it does not seem



The entablature, looking up

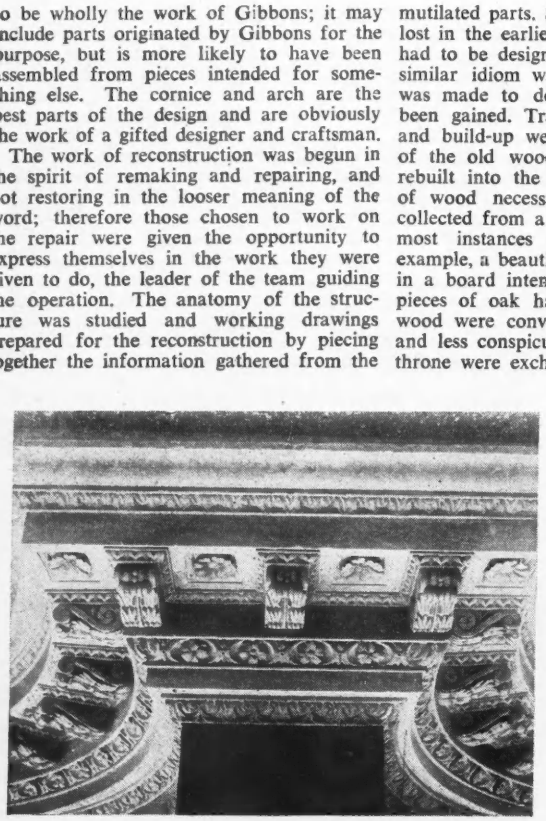


The elevations and plans

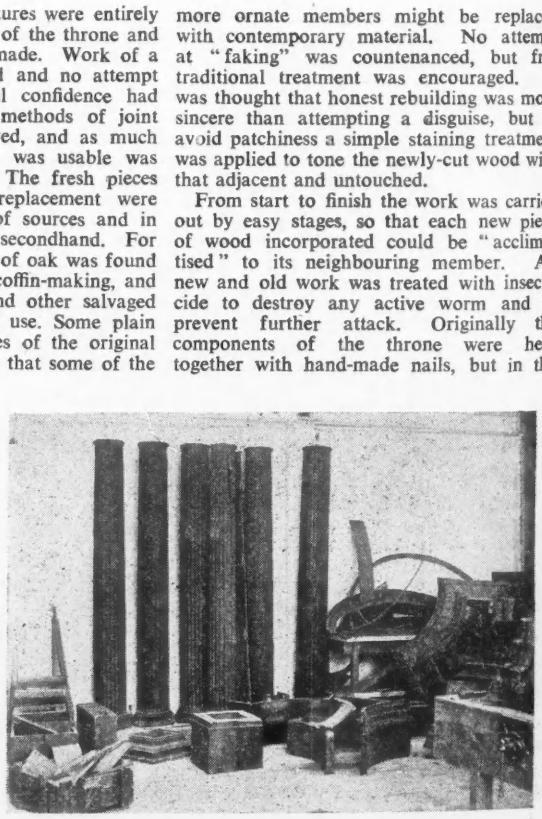
to be wholly the work of Gibbons; it may include parts originated by Gibbons for the purpose, but is more likely to have been assembled from pieces intended for something else. The cornice and arch are the best parts of the design and are obviously the work of a gifted designer and craftsman.

The work of reconstruction was begun in the spirit of remaking and repairing, and not restoring in the looser meaning of the word; therefore those chosen to work on the repair were given the opportunity to express themselves in the work they were given to do, the leader of the team guiding the operation. The anatomy of the structure was studied and working drawings prepared for the reconstruction by piecing together the information gathered from the mutilated parts. Some features were entirely lost in the earlier history of the throne and had to be designed and made. Work of a similar idiom was studied and no attempt was made to design until confidence had been gained. Traditional methods of joint and build-up were observed, and as much of the old woodwork as was usable was rebuilt into the throne. The fresh pieces of wood necessary for replacement were collected from a variety of sources and in most instances it was secondhand. For example, a beautiful piece of oak was found in a board intended for coffin-making, and pieces of oak handrail and other salvaged wood were converted for use. Some plain and less conspicuous pieces of the original throne were exchanged, so that some of the more ornate members might be replaced with contemporary material. No attempt at "faking" was countenanced, but free traditional treatment was encouraged. It was thought that honest rebuilding was more sincere than attempting a disguise, but to avoid patchiness a simple staining treatment was applied to tone the newly-cut wood with that adjacent and untouched.

From start to finish the work was carried out by easy stages, so that each new piece of wood incorporated could be "acclimatised" to its neighbouring member. All new and old work was treated with insecticide to destroy any active worm and to prevent further attack. Originally the components of the throne were held together with hand-made nails, but in the



View of entablature as restored. Note modillions and paterae



The collection of parts as received from Canterbury Cathedral

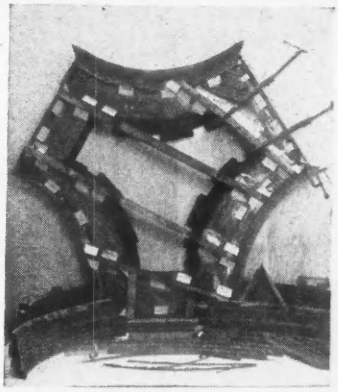
Pediment vase as restored and recarved

reconstruction super fish glue has been used throughout.

Summary of Work Done

As already stated, the throne is of oak except for the skeleton of the structure inside the arch and the canopy, and judging from the varieties of soft wood used in these positions the throne has been repaired on two previous occasions, the second about 1892. Following is a brief summary of the work which has now been done, from base upwards:—

Plain square plinths. These were remade in the main to restore their original strength.



Internal view of damaged entablature, showing first strengthening and position of detailed mouldings

Fluted columns. Minor repairs were necessary to four of these, but the other two needed major repair and were opened up and reconstructed.

Carved Corinthian capitals. Two of these were badly damaged and broken into many pieces. All capitals were shorn of the fine projecting foliage, minute pieces of which were picked up and carefully matched into original positions and refixed.

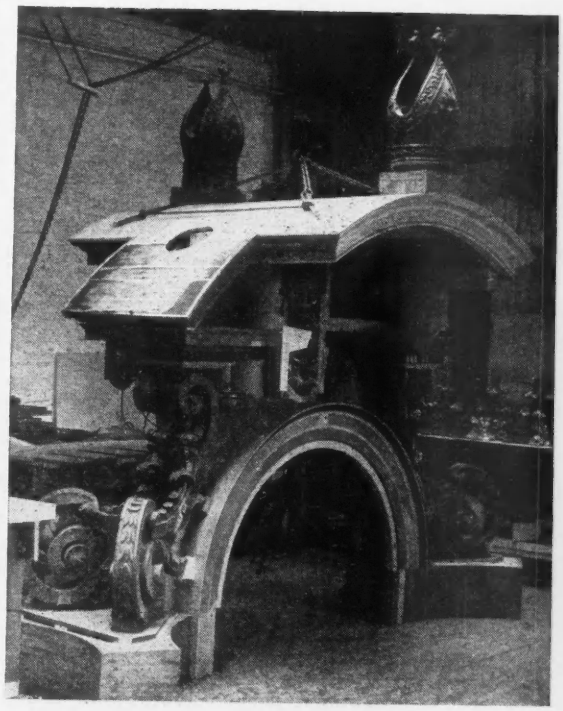
Triangular entablatures. These coronae were severely damaged, and the modillions and paterae were missing. The entablatures were carefully pieced together and remade and strengthened within the core of the structure. Missing pieces were designed, carved and added to the entablatures to complete them.

Carved trusses or consoles. These stand upon the entablature and support the canopy. Major repairs and insertion of new pieces of oak were necessary for two of them. The other two, though less severely damaged, also needed repair. The weight upon these trusses was sufficient to cause them to split, but by the addition of inconspicuous bearing pads some of the weight is now transferred to the arch separating the two pairs of trusses.

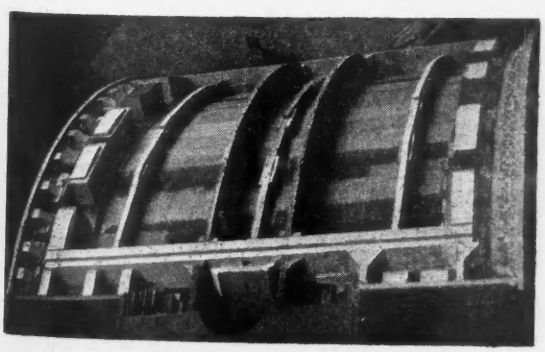
Dentiled and ordered square caps surmounting the trusses were in fair

Mitre as fully restored

Capital completed



Assembly of partially restored arch and pediment



Top of pediment, showing structural restoration

condition, though earlier repairs and additions had been made rather carelessly. New cover boards were made and fitted.

Semi-circular arch bridging from entablatures at either side. This was mutilated so badly that it was at first thought to be beyond repair. Pieces of the arch were, however, revealed in sorting out the salvage, and the proper radius was calculated and all the surviving parts incorporated in a reconstructed arch. The curved mouldings to the arch and pediment are built up with thin laminations bent round a "former" and fixed together and secured with numerous small blocks.

Pediment or canopy. This was seriously damaged and in pieces, with some parts missing. One wide panel and other parts were damaged beyond repair, and were replaced in the final reconstruction. The internal framing was strengthened and the whole feature remade.

Valance to canopy. This was made up of pendant pieces of carved wood, the number of these exceeding the number that could be accommodated on the canopy. The pieces were of unequal quality; and examination of the wood and carving showed that several pieces were not contemporary with the rest of the work. Several of the original carved panels had been roughly cut to fit over the mouldings erroneously. These mutilated panels were of fine character and were pierced and carved to match the surrounding patterns.

Mitres were broken and carving damaged, but nothing was missing. These were repaired and pieced together.

Vases were broken and some petals of the carved flowers missing. Missing parts were replaced and the other parts repaired.

From all appearances, an attempt had been made to stain and polish surfaces that could be easily treated in this way. The consoles or trusses, with the mitres and part of the valance, had been treacled over with a dark substance. These stains and polishes have been cleaned off to reveal the oak in its natural colour.

This painstaking, scholarly and sympathetic work of repair and restoration was carried out in the workshops of Messrs. James Longley and Co., Ltd., at Crawley, and its success is due to close co-operation among a devoted team of workers, whose names are hereby recorded: Craftsmen, Harry Pavey and William Illman, assisted by apprentice C. E. Burrage; carver, Reg. Bacon; cleaning and toning and ornament, George Winder; historic research, measuring and recording, G. C. Cockburn, M.A.; designs and final record drawings, Eric White, under whose guidance the whole undertaking was carried out. Photographs are by Lewis G. Ball, except for the one of the throne in the R.A. exhibition which is by A. C. Cooper and Sons, Ltd.

CORRESPONDENCE

Professional Conduct

TO THE EDITOR OF *The Builder*

SIR,—The more one studies the amendment to the Architects' Registration Council's Code of Professional Conduct, to which you drew attention in your last issue, the more unworkable it seems to be. Publication of illustrations of works of current architecture is an old-established practice, of proved advantage to the architectural profession and the community. Now, for the first time in history, the architect is officially required to plumb his motives for conforming with normal custom. This is most unfair.

The human mind is far too complex to allow of a just and satisfactory answer to such self-probing. Sensitive and diffident men might well decide to withhold their work from publication lest it be thought that they were seeking to increase their practices, and the result might be a regrettable loss to the printed records. Others, not so "sicklied o'er with the pale cast of thought," could readily dismiss such fine scruples from their minds. The decision to illustrate or not should be left not to the conscience of the individual architect but, as you rightly suggest, "to the discretion and good sense of those who conduct the technical Press."

I find it hard to believe that the Registration Council can seriously wish to place any sort of embargo on the publication of current work in the technical Press—the custom is too well established; nor could they have intended to suggest, as they do, that the technical Press is open to bribery and corruption. It is much more likely that some particular instance of unprofessional conduct that has nothing to do with the technical Press has been brought to their notice and that in devising an amendment to the Code to cover it they have unintentionally cast a doubt on a normal and perfectly legitimate practice. If this is so they should gracefully admit their fault, withdraw the offending amendment and concoct one to condemn a particular reprehensible practice and nothing more.

ONLOOKER.

S.W.19.

Operatives' Wage Increase and Cost of Housing

TO THE EDITOR OF *The Builder*

SIR,—In answer to Mr. Johnson's further letter appearing in your issue of March 9.

1. The recent increases totalling 3d. an hour (½d. for cost of living and 2½d. basic) represent an addition of 8.7 per cent. (let us agree on 9 per cent. to simplify matters) on the craftsmen's "A" grade rate. On this point, therefore, I do not join issue with Mr. Johnson.

2. The Girdwood Committee's second report gives a figure of £348 for wages and overtime on a house whose total cost (excluding cost of land and site development and the quantity surveyor's and architect's fees) is £1,321.

3. An increase of 9 per cent. on the wages adds a little over £31, which is 2.3 per cent. of £1,321, or 2 per cent. of the total of £1,515, this taking into account the excluded items amounting to £194.

4. The total labour cost, including wages, is given as £407, and the total materials cost as £785. The total labour cost is thus 27 per cent. of the total cost, and the total materials cost is 51 per cent. of the total cost. If we take £1,321 as the total cost, that is, excluding the items mentioned, then the labour cost is 31 per cent. and the materials cost is 59 per cent.

5. The National Joint Council has not issued any statement about the effect on the cost of housing. The N.J.C. does not make controversial statements, but confines itself to facts. The official announcement is reproduced in *The Builder* of February 16, p. 256. The statement about the £25 is your own comment, given in your leader in the same issue.

R. COPPOCK,
General Secretary N.F.B.T.O.

Federal House, Clapham, S.W.4.

TO THE EDITOR OF *The Builder*

SIR,—Your correspondent Mr. Stanley G. Johnson [*The Builder*, March 9] has reversed his cost proportions. Taking the average council house at a cost of £1,400, the material cost is nearly 60 per cent., not the labour cost; approximate percentages are labour 33 per cent., materials 56 per cent., plant and overheads 11 per cent. Including the ½d. per hour increase as from February 5 the increase on the 3s. per hour rate is 8.3 per cent. and not 9 per cent. as stated. Labour cost at 33 per cent. of £1,400 equals £462, the increased cost is therefore 8.3 per cent. on £462, which is approximately £38 per house.

Based on man hours per house (a more accurate method) the increase is 2,850 man hours at 3d. per hour, which equals approximately £36.

C. E. ABBOTT.

Sighthill, Edinburgh.

Russian Bricklaying Claims Disputed

TO THE EDITOR OF *The Builder*

SIR,—May I, as a humble builder's manager, be permitted to pass a few comments on the report on Building in Russia published in your issue of March 9.

First, allow me to make it quite clear that I am not attempting to champion the low output prevalent amongst the craftsmen in the industry at home to-day. Many of the obstacles impeding a reasonable day's work can be overcome, provided at all times the employer and employee are willing to co-operate.

However, to come to the point at issue, I personally would say that it is not possible for a bricklayer of any nationality to lay 10,000 to 15,000 bricks per day, as stated by the speaker reported.

From 1924 to 1935, whilst I was engaged in bricklaying, labour was a lot easier to obtain than is the case to-day, and generally speaking the bricklayer who laid on an average 1,000 bricks properly, in a day's work, was recognised as a good craftsman, and this is at all times dependent on the conditions and the various classes of works encountered.

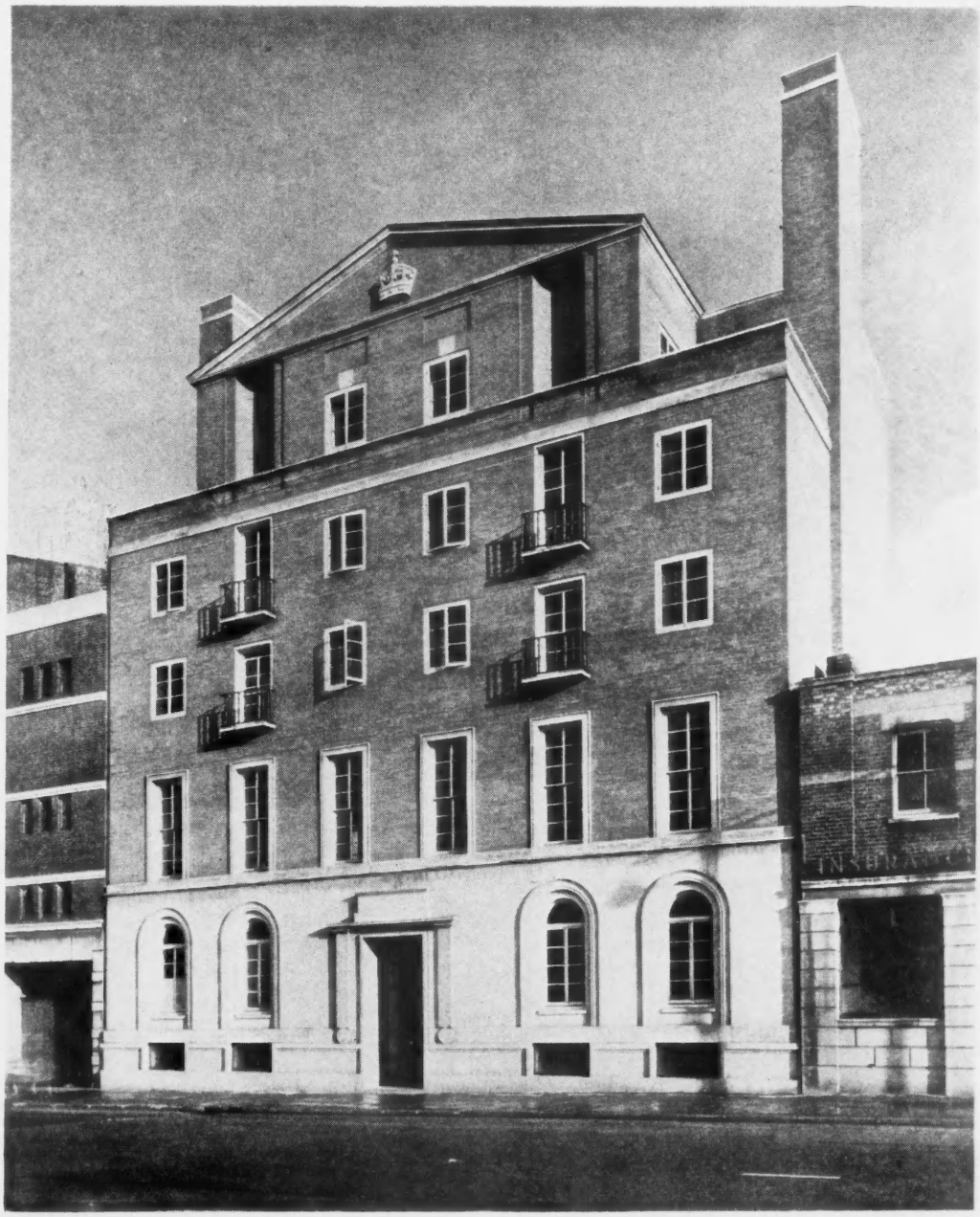
Most of us are aware of the fact that production has deteriorated during the past few years, but I am sure that when I was at my very best, and with everything in my favour, I could never have attained the enormous output which has been claimed for the Russian bricklayers.

If we calculate the number of 15,000 bricks being laid over an eight-hour day, and I am daring enough to suggest that eight hours of this high speed will test the stamina of the best of men, we arrive at an average of approximately 31 bricks being laid for every MINUTE. I would therefore respectfully suggest that our visitors have been misled by a person or persons who are sadly lacking in practical knowledge.

Should this be the case, it is to be hoped that the statements published will be investigated as soon as possible, to avoid any further aspersions being cast upon the skill and integrity of the true British craftsman, who, to my belief, is as good as the best in the world.

G. S. ANDREWS.

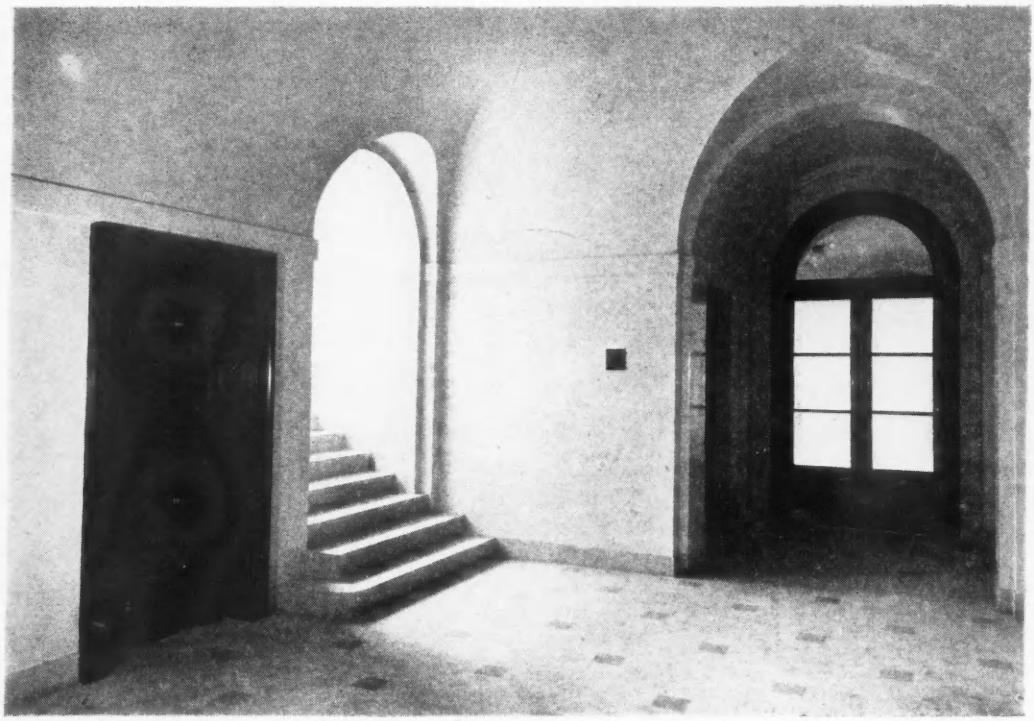
Chingford, E.4.



Elevation to Mare-street

POLICE SECTION HOUSE, MARE STREET, HACKNEY

FARQUHARSON AND McMORRAN, FF.R.I.B.A., ARCHITECTS, UNDER THE DIRECTION OF J. INNES ELLIOTT, B.ARCH., A.R.I.B.A., CHIEF ARCHITECT, METROPOLITAN POLICE



Staircase lobby

THIS building, which was opened on February 26 last by the Home Secretary, the Rt. Hon. James Chuter Ede, M.P., provides hostel accommodation for 137 men of the Metropolitan Police. It is on the site of a smaller section house which provided sleeping accommodation of the cubicle type. The rear portion of this old building was pulled down in 1938 and replaced by the main part of the present building, while the accommodation in the front portion facing Mare-street was converted from cubicles to separate bedrooms.

Entrance hall

In 1940 the building received a direct hit at the junction of the old and new work. The effect on the new work was limited by the framed construction, but the old work, consisting of load bearing walls, was rendered unsafe. This portion has now been removed, and replaced by a new wing containing more accommodation.

The building provides, in addition to bedrooms, canteens, residents' dining-room, recreation rooms and gymnasium.

The architects, acting under the direction of Mr. J. Innes Elliott, the Chief Architect, New Scotland Yard, were Messrs. Farquharson and McMorran ; the consulting engineers were Messrs. Perkins and Partners ; the quantity surveyor, Mr. E. C. Desch, in association with Messrs. Bunn, Grover and Harris ; and the clerks of works were Mr. G. H. Fuller (first section) and Mr. C. O. Harvey (second section).

The contractors were for the first (pre-war) section, Messrs. W. Loweth and Sons, Ltd., and for the second section, Messrs. Holland & Hannen and Cubitts, Ltd., with Mr. A. Norman as general foreman.

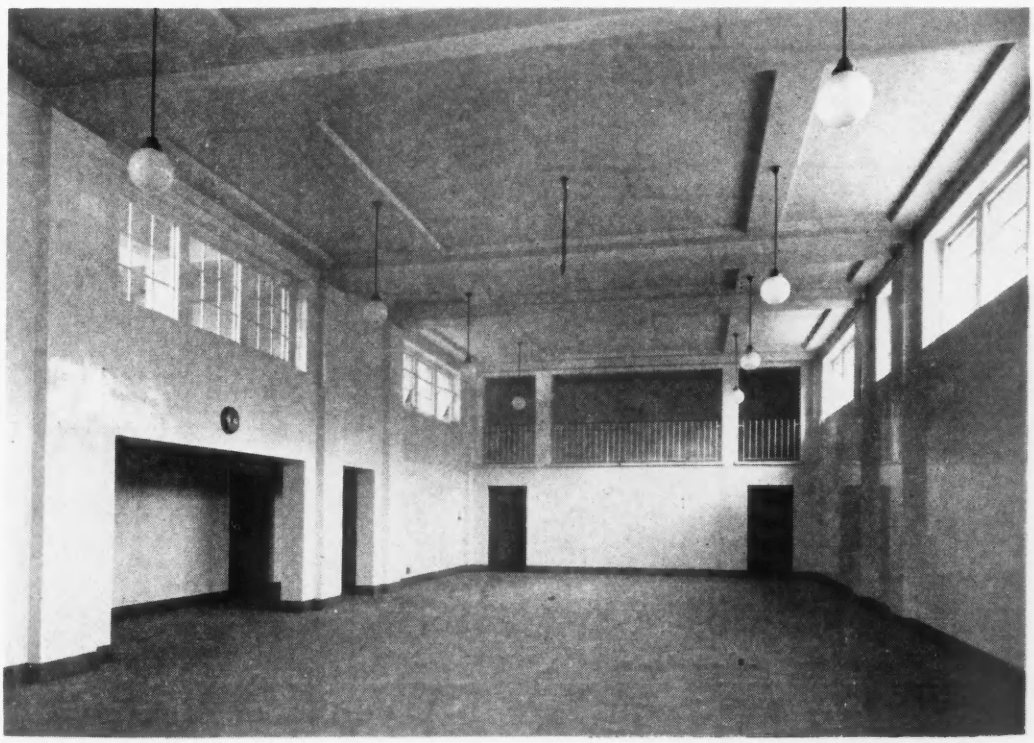
Lettering cut by Mr. Sidney Pool

Sub-contractors were as follows : Suspended ceilings, Bracketing, Centring and Lathing, Ltd. ; kitchen equipment, Carron Company ; patent flat roofing, Frazzi, Ltd. ; facing bricks, Finnis, Ruault and Nicholls, Ltd. ; demolition, Gorst and Co., Ltd. ; steel reinforcement, Helical Bar and Engineering Co., Ltd. ; wood block floors, Hollis, Bros. and Co., Ltd. ; fibrous plaster ceilings, G. Jackson and Sons, Ltd.

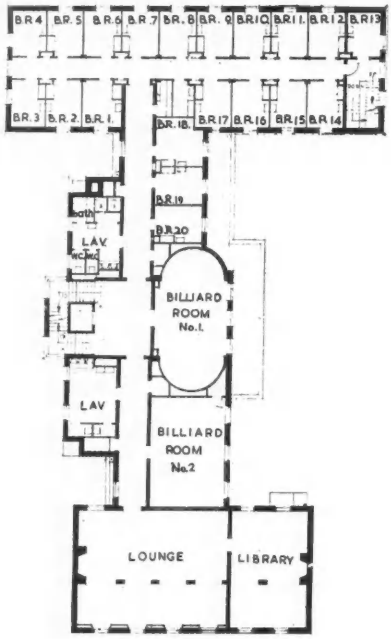
Ironmongery, W. and R. Leggott, Ltd. ; bronze windows, etc., Luxfer, Ltd. ; asphalt work, Lawford Asphalte Co., Ltd. ; steel windows, R. E. Pearse and Co., Ltd. ; panel warming installation, Rosser and Russell, Ltd. ; domestic hot-water installation and plumbing work, Stitson White and Co., Ltd. ; electrical installation, Waring, Withers and Chadwick, Ltd. ; glazing, Aygee, Ltd.

Tarmac paving, Chittenden and Simmons (Contracting), Ltd. ; joinery, J. P. White and Sons and J. Long and Sons (Bath), Ltd. ; sanitary fittings, John Bolding and Sons, Ltd. ; granite work, Anselm Odling and Sons, Ltd. ; cast-iron balconies, Carron Company ; floor and wall tiling and terrazzo work, Camden Tile and Mosaic Co., Ltd., Walton Gooddy (Construction), Ltd. ; accotile flooring, Armstrong Cork Co., Ltd. ; reconstructed stone, Empire Stone Co., Ltd.

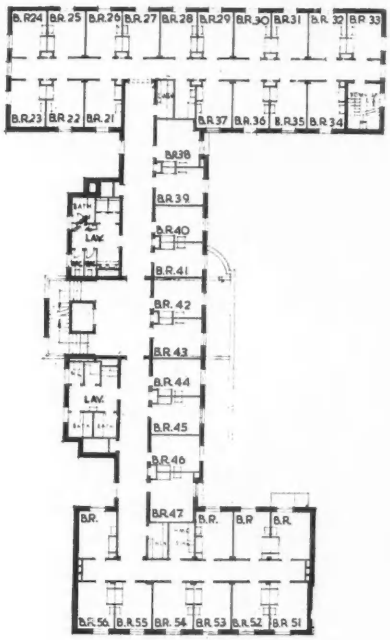
Electric clock installation, The Synchronome Co., Ltd. ; Portland stonework, South-Western Stone Co., Ltd. ; plastering, Plaster Decoration Co., Ltd. ; painting, Thornfield and Co., Ltd. ; lift installation, Hammond and Champness, Ltd. ; copper roofing, Holloway Metal Roofs, Ltd. ; lettering and stone carving, Mr. George Mansell, Mr. James Wedgwood ; letter cutting, Mr. Sidney Pool.



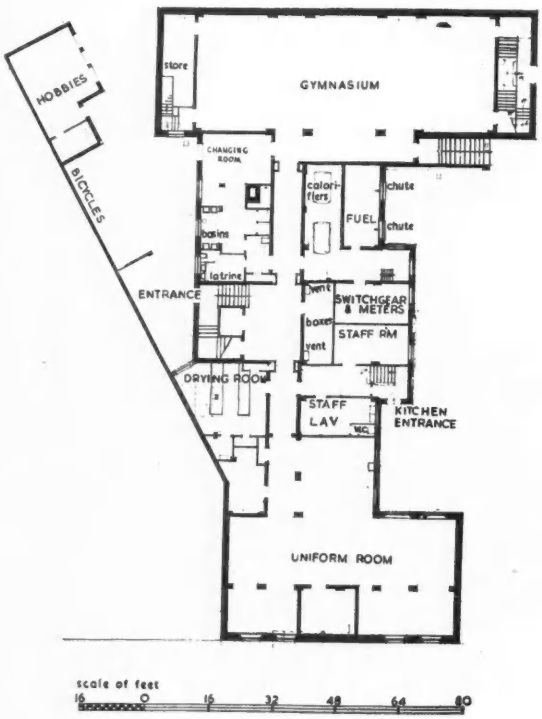
The gymnasium



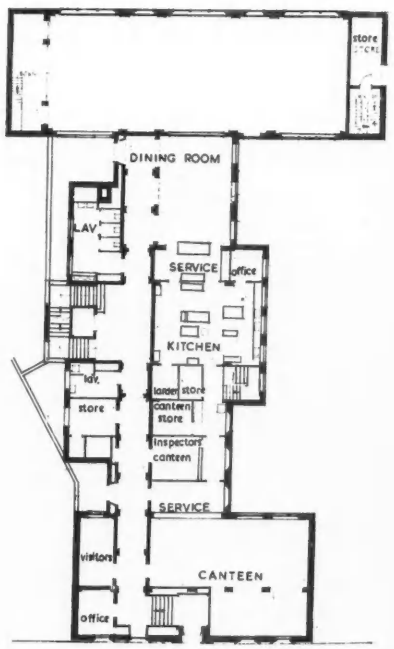
First-floor plan



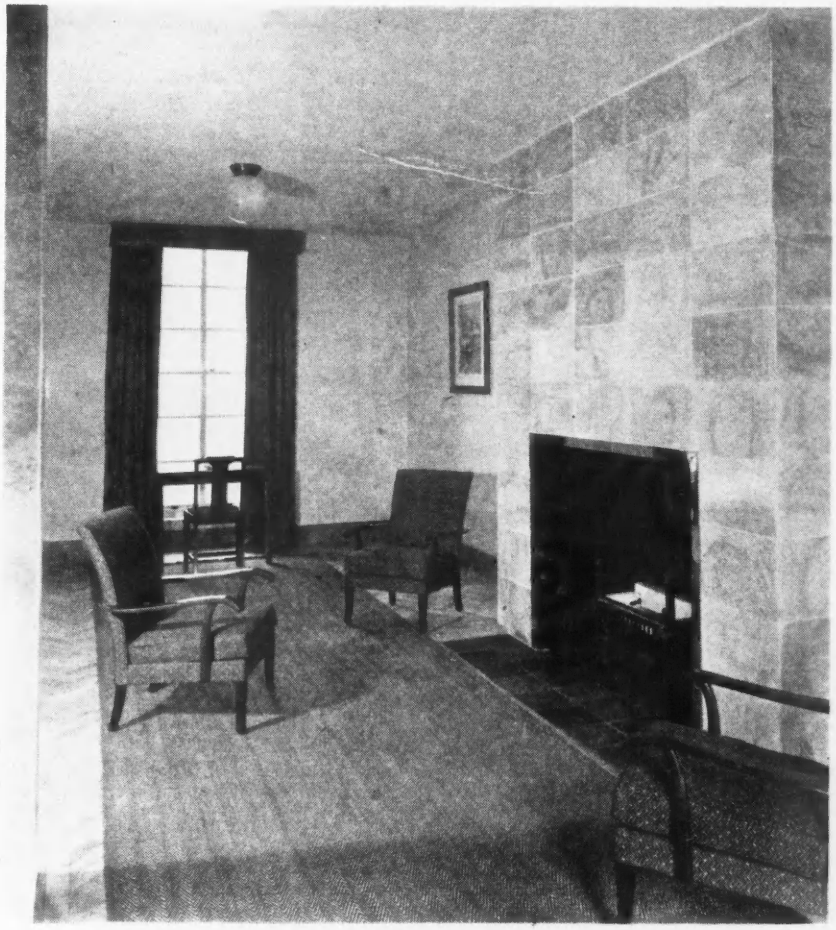
Upper-floor plan



Lower ground-floor plan



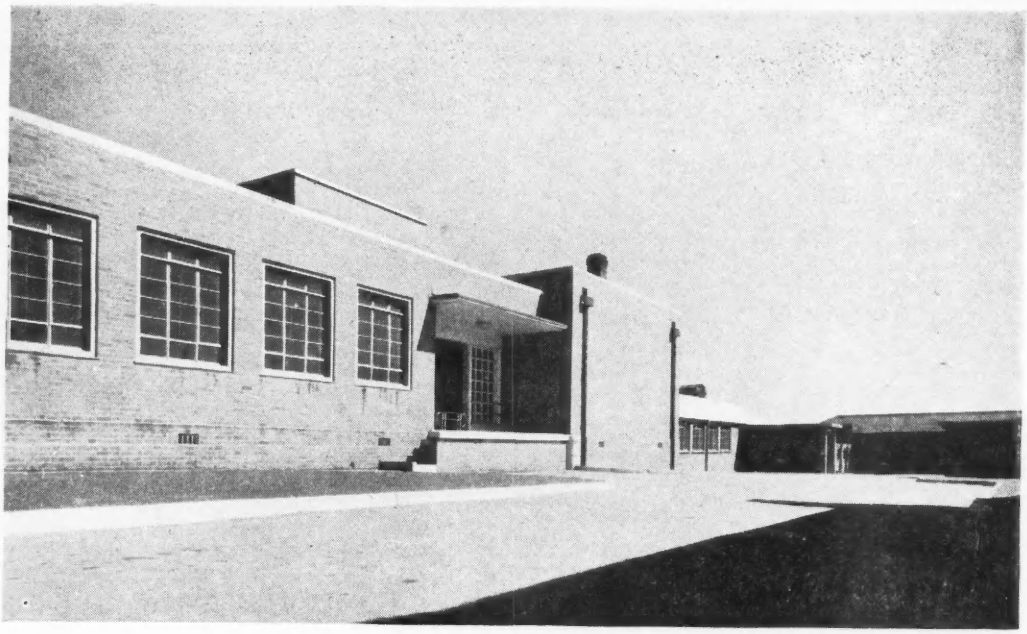
Ground-floor plan



The library

POLICE SECTION HOUSE, MARE STREET, HACKNEY

The lounge



Front elevation showing loading platform. *Below:* **the plan**

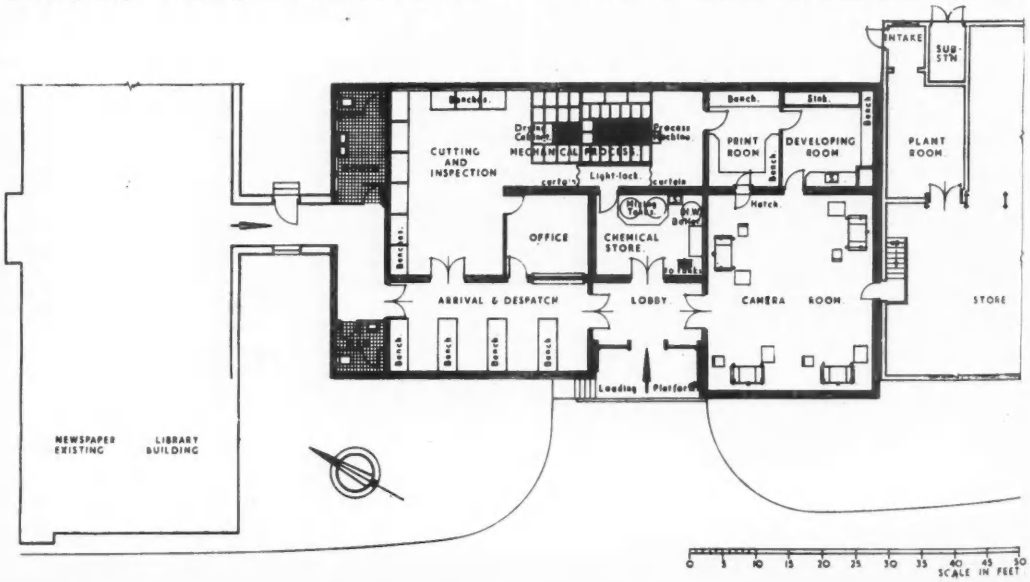
BRITISH MUSEUM MICROFILM ANNEXE, COLINDALE

W. A. RUTTER, C.B.E., F.R.I.B.A., CHIEF ARCHITECT, M.O.W.
W. KENDALL, A.R.I.B.A., ARCHITECT IN CHARGE

BEFORE the 1939–45 war the British Museum Library's collection of newspapers was housed in a two-storey building at Colindale. On October 20, 1941, the older of the two wings in which were stored the files of provincial newspapers, dating back to the eighteenth century, received a direct hit from a 2,000-lb. armour-piercing bomb. The whole building, which was about 100 yds. long and 50 ft. wide, collapsed. But bound volumes of newspapers are very solid objects and it was possible to rescue over three-quarters of the contents of the building from the wreckage. As volumes were retrieved they were piled in heaps from floor to ceiling in the few remaining empty spaces in the surviving wing. There they have remained ever since, as there has been no space available in which they could be sorted.

The museum was therefore faced with the problems of sorting the damaged material and of housing the annual intake of new newspapers—some 2,500 volumes occupying about 120 yds. of shelving—with no possibility of having a permanent building of adequate size constructed. Soon after the war, Sir John Forsdyke, who was then Director and Principal Librarian, decided that the only solution was the use of microfilms and the transfer to storage, that it was hoped would be available in the country, of volumes of newspapers after they had been filmed.

As the limited demand has not made it worth while



developing in this country specialised equipment for the microfilming of newspapers, it was necessary to obtain this from America. The dollar problem was overcome by a most generous gift from the Rockefeller Foundation of New York who have provided five cameras, a processing machine and a printing machine of the most modern type together with ancillary equipment. The Ministry of Works has now been able to erect a small building on the site of the destroyed wing at Colindale as a microfilm studio and two temporary sheds in which the sorting of the newspapers rescued from the destroyed building can take place. The design of the microfilm annexe was based on a suggestion by Mr. Eugene B. Power of Ann Arbor, Michigan, who has given the museum much assistance in planning and carrying out this scheme. The Ministry of Works architects have produced what is probably the best appointed microfilm studio in the world at the present moment. The building is planned as a production unit to suit the methods worked out in collaboration between Sir John Forsdyke, Mr. Power and Ministry of Works architects and engineers. An air-conditioning plant maintains a dust-free atmosphere of even temperature and humidity as required for the several stages of the process from photography of the original material to development, cutting and handling of the record film. A small staff has now been recruited and work has started, although the unit will not be in full operation until more camera operators are available.

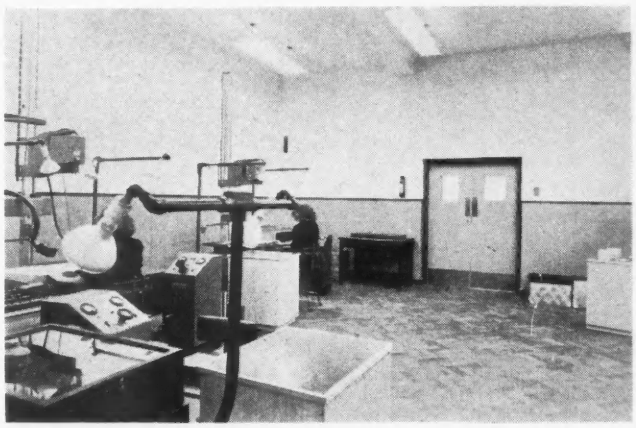
Non-inflammable 35 mm. film is used. The cameras have automatic travelling book-holders, so that opposite pages of a bound volume alternately come into position under the camera which is supported above the book on a vertical pillar. In the processing machine, which is a modification of a type used in Hollywood film studios, the film passes continuously over rollers through tanks of developer and fixer, and through washing and drying chambers at the rate of 2,000 ft. per hour. The automatic printer is also the microfilm version of a machine developed for motion picture work. One thousand feet of positive can be printed in about 13 minutes, the printing light being varied to suit the density of the negative in accordance with settings previously determined by the operator. Facilities are also available for making enlargements of the microfilm up to the original size of the newspaper.

The Rockefeller Foundation gift included a number of the latest American type of microfilm reading machine which is specially suitable for newspaper work. The image of the film is projected on to a mirror at the back of a metal box and from this on to a greenish translucent reading screen. By pulling the hinged screen in or out the person reading can enlarge or diminish the image to the most comfortable size.

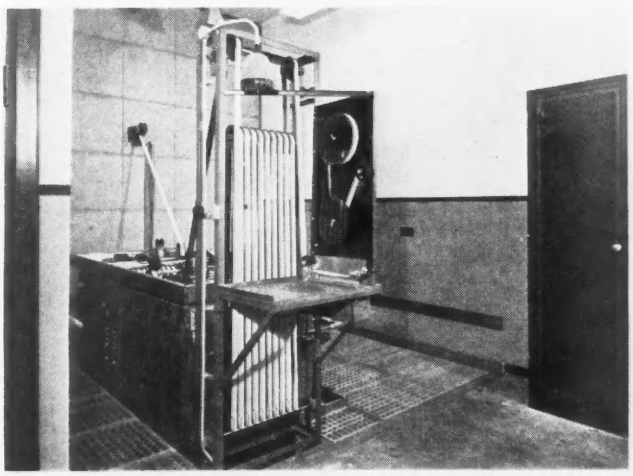
For the time being all newspapers (except London newspapers before 1800) will continue to be consulted at Colindale, the only difference being that those which have been microfilmed will be consulted on film in the reading machines. Subsequently it is hoped that accommodation for consultation of these microfilms will be available in the main museum library at Bloomsbury so that readers will be saved the journey down to Colindale.

The general contractors were Messrs. Y. J. Lovell and Son, Ltd., of Paddington, W.2.

Cutting and inspection room

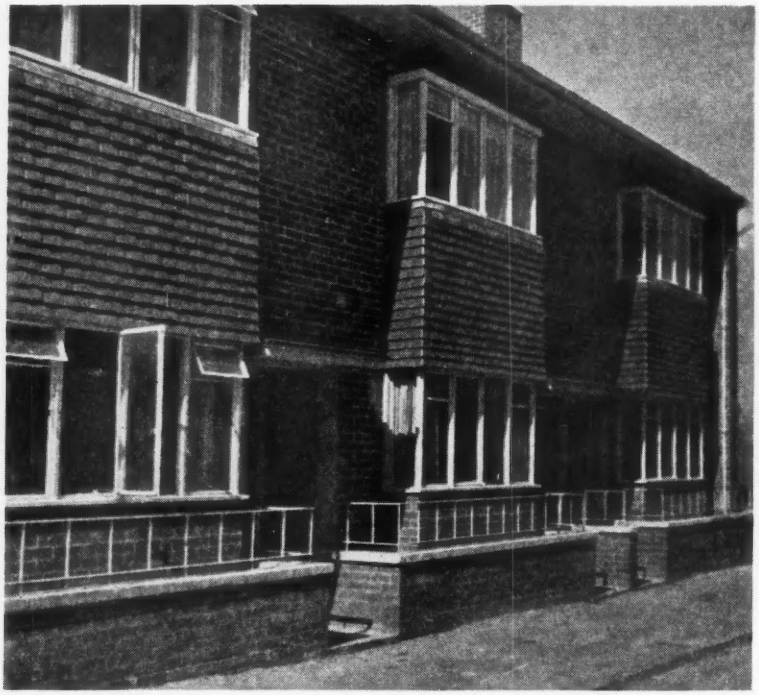


Camera room



Processing room, floor gratings are of teak

The following were sub-contractors:—Wood floors, Hollis Bros.; hollow tile roof slabs, F. Bradford and Co., Ltd.; copper rainwater down pipes and plumbing, Engineering Services Installation, Ltd.; asphalt floors and roofs, Highways Construction, Ltd.; wall tiling, Carter and Kernahan, Ltd.; printing, J. H. Kenyon; heating and air-conditioning, Comyn Ching and Co., Ltd.; electrical installation, Troughton and Young (Electrical Services), Ltd.; glass and concrete lights, Lenscrete, Ltd.



Front elevation

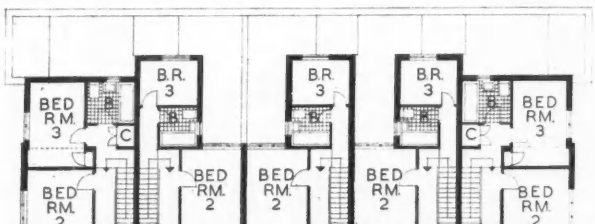
WAR DAMAGE REINSTATEMENT OF FIVE HOUSES AT EDGE LANE, LIVERPOOL

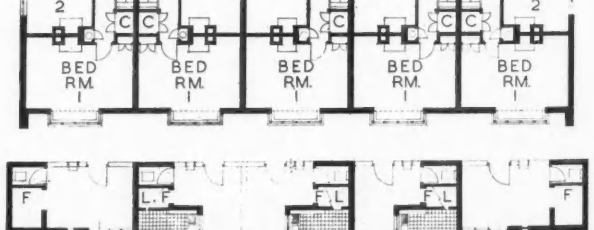
HERBERT THEARLE, F.R.I.B.A., ARCHITECT

THE object of this scheme was to rebuild for a "permissible amount" a block of five houses which were demolished by a bomb. It was necessary to build on the existing foundations and to retain the bay windows.

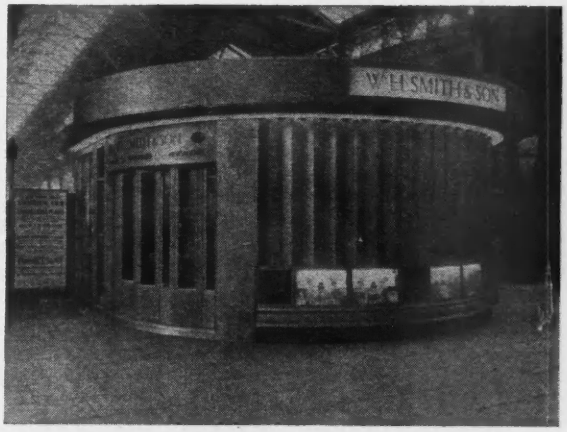
The walls, externally, are 9 in. brickwork, staircases are in concrete with hardwood treads, roofing and tile hanging in concrete tiles. The back to back fireplaces in the living-rooms and parlours all have hot water boilers. Standard metal windows are fixed in wood frames. The cost of the five houses (1946) was £6,700. The general contractors were James Tomkinson and Co., Ltd., Liverpool.

The sub-contractors were as follows:—electrical works, Parry's Electrical Engineers; steel windows, Williams and Watson, Ltd.; sanitary fittings, Baxendale and Co., Ltd.; iron railings, George Lowe and Sons, Ltd.; asphalt, Val de Travers, Ltd.; ironmongery, Quiggin Bros., Ltd.





Ground- and first-floor plans



This new station bookstall of Messrs. W. H. Smith and Son has an all-aluminium exterior, with aluminium shutters for closing down at night

ALUMINIUM IN BUILDING

An Alternative to Traditional Materials

By JOSEPH B. SINGER, B.Sc.(Arch.)

PRESENT-DAY economies in the use of steel and timber compel architects to look for alternative materials to solve design and constructional problems in building.

Aluminium as a metal has been known for over a century and was first used architecturally more than 40 years ago. Extensive application of aluminium in building, however, dates only from very recent years, and particularly rapid progress has been made in the last decade. Plentiful supplies at a moderate cost and its quality established aluminium as one of the more important building materials.

Aluminium is obtained from bauxite by an electrolytic process. Although pure aluminium is used in architectural work, various constituent elements are added to impart the desired properties, and the selection of a suitable element depends on the requirements.

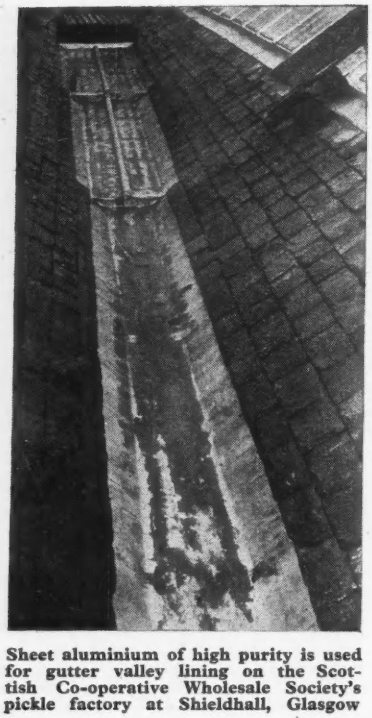
One of the chief characteristics of aluminium is its lightness, which has considerable bearing on economies that can be achieved by reduction in the weight of structural members, saving in transport and installation costs. The specific gravity of aluminium alloys ranges from 2.55 to 2.95 compared with iron 7.8 and bronze 8.8.

Generally, the resistance of aluminium alloys to atmospheric corrosion is very high, due to the formation of a thin film of oxide on the surface, and this can be further improved by anodising.

Aluminium in contact with wet concrete, mortar or other alkaline building materials will corrode; electrolytic corrosion is also liable to occur when aluminium is in contact with other metals; the action of soil may result in localised pitting. When aluminium is used for external facing in conjunction with other metals anchors, which have been painted or galvanised to protect them against corrosion, are used for attachment purposes. Aluminium surfaces which are built into brickwork, masonry, concrete or plaster and come into contact with these materials have to be painted with bituminous or aluminium paint. One coat of bitumastic is applied on the bottom of cills of aluminium windows prior to setting and grouting.

The coefficient of thermal expansion of aluminium is about twice that of steel, and sufficient allowance has to be made for dimensional changes when exposed to considerable differences in temperature. The melting point of aluminium is much lower than that of steel, and it may therefore seem that light metal structures involve a greater fire risk. It has been proved that the rise in temperature of a structure due to fire causes the proof strength to fall; the limiting temperature which a fully loaded steel structure will withstand is 450 deg. C., in comparison with 225 deg. C. for aluminium. Heat conductivity of aluminium is, however, five times that of steel, and consequently it takes much longer to heat an aluminium structure to 225 deg. C. than a correspond-

The Swiss National Tourist Office in the Strand is another example of an all-aluminium shopfront. The louvres are satin-finished and the entrance door is of silver anodised aluminium



Sheet aluminium of high purity is used for gutter valley lining on the Scottish Co-operative Wholesale Society's pickle factory at Shieldhall, Glasgow

ing steel one to 450 deg. C., owing to a rapid dissipation of heat to other parts, where it can radiate freely. The risk of distortion in aluminium due to fire is much smaller than in the case of steel. Insurance companies recognise these factors and rate aluminium structures at the same level as those of steel. All cold working operations necessary in fabricating building components in aluminium are quite feasible owing to the ductility and malleability of the metal. Aluminium can be softened by annealing at 300-350 deg. C. Non-heat-treated alloys can be worked similarly to aluminium, but the extent of cold work possible depends on the composition and initial hardness of the alloy; cold working operations are somewhat more difficult in case of heat-treated alloys ; they are, accordingly, often worked before final heat treatment. Aluminium and its alloys can be jointed by welding, brazing or mechanical methods, e.g., screwed or riveted connections.

Decorative Finishes

Aluminium products after fabrication do not require any further treatment or protective layer, but a special finish is often desirable for decorative purposes. Polishing produces a bright, highly reflective surface, which must occasionally be washed to prevent the formation of a dull oxide film. Sand-blasting, hammer-finishing and fluting can impart interesting texture to the metal, while a satin finish is produced by rotating fine wires over the surface.

Chemical bath treatments, which produce a very fine-grained surface, may also be employed. Chemical oxide coatings are comparatively inexpensive finishes that can form a suitable base for paint, and a hard corrosion-and-abrasion-resistant surface is produced by electrolytic treatment. Alternatively, chromium, nickel, copper or zinc can be electro-deposited on aluminium, but this type of finish is only recommended for interior applications. Paints and lacquers are used in a similar manner as in the case of other metals. Transparent coatings of lacquer or varnish are sometimes employed to preserve a natural or polished finish.

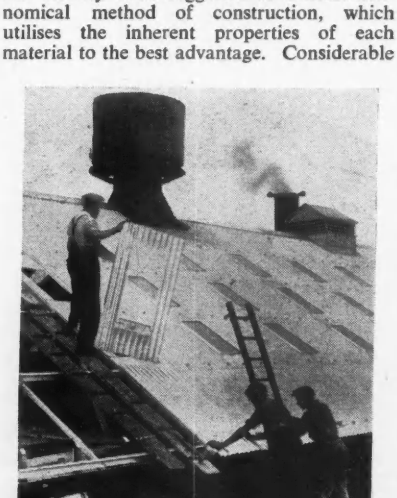
Aluminium Structural Members

Unlike steel, aluminium alloys do not exhibit any yield point, and the stress required to produce a permanent elongation of 0.1 per cent. (called Proof Stress) is taken as a basis in design of light metal sections for permissible loading.

The commercially pure aluminium is very ductile and has a strength of 5-9 tons per sq. in. only. Aluminium alloys are divided into two groups, the first being heat-treatable high-strength alloys—used for structural purposes and prefabricated units—with tensile strengths of up to 26 T/sq. in., 0.1 per cent. Proof Stress of up to 20 T/sq. in., and 8-15 per cent. elongation; and the second group consisting of non-heat-treatable alloys ranging from alloys of moderate strength and high ductility to alloys of high strength but lower ductility with tensile strengths of up to 23 T/sq. in., 0.1 per cent. Proof Stress of up to 14 T/sq. in., and 3-30 per cent. elongation.

Analysis of steel and aluminium structural properties shows that the yield point of steel is approximately half the ultimate tensile strength, while in the case of aluminium alloys the 0.1 per cent. Proof Stress corresponds to approximately 2/3 of the ultimate tensile stress. The modulus of elasticity of aluminium alloys is only 10×10^6 lb./sq. in. in comparison with 30×10^6 lb./sq. in. for steel. It is thus apparent that the design of aluminium structures involves making an allowance for high Proof Stresses and differences in the elasticity of the metal.

The advantages of aluminium alloys for structural members are mainly lightness and high corrosion resistance; the metal does not require any protective treatment. In multi-storey buildings it is important to reduce dead loads to a minimum. The use of aluminium alloys for beams and transverse members subjected to bending, in combination with r.c. vertical compression members, has already been suggested as a more economical method of construction, which utilises the inherent properties of each material to the best advantage. Considerable saving can be achieved since aluminium alloys are one quarter the weight of steel for the same strength and about 1/13th the weight of reinforced concrete.



Rigidal sheetlights and corrugated aluminium sheet laid on Tentest insulating board, and aluminium alloy BA. 25-WP roof trusses used in the reconstruction of a roof at the British Aluminium Co.'s Warrington works

In single-storey buildings the lightness of aluminium makes possible a considerable degree of prefabrication, and mass-produced structural components find numerous applications to-day, of which roof trusses are the best known examples. Aluminium alloy extruded sections are used extensively for framing light partitions, where they provide vertical and horizontal supports spaced at regular intervals.

Aluminium Sheets

Aluminium alloy sheets are produced in a wide range of thicknesses and used for composite panels in light partitions. The core can be formed of plywood, hardboard or different insulating materials, including glasswool, balsawood, honeycomb plastic material and cork. The partitions can be glazed and constructed similar to metal windows. Aluminium-faced plywood is also used for doors, panels, etc. Alternatively, plywood panels with aluminium core, imparting greater rigidity, are employed for built-in furniture and similar articles. The aluminium core of plastic laminates contributes to a better stability of the product and enables curves of small radius to be formed; moreover, shaped laminates have less tendency to return to their original position.

Exterior facing work in aluminium has been more extensively used in America, particularly in multi-storey buildings, where speed of construction and reduction in dead loads are important factors.

Aluminium spandrel panels below windows form light infillings between vertical pier and column facings. It is a common practice to use cast spandrel panels and extruded sections for vertical members with adjoining parts overlapping or interlocking for a water-tight connection. Other applications of a similar nature include shop and store fronts, in a great variety of decorative forms and finishes.

Roofing

Experience of aluminium roofing has shown that the corrosion resistance of the metal is satisfactory under varied atmospheric conditions. Aluminium for roofing is produced either in the form of flat or corrugated sheets. The lightness of the metal, which for a given thickness is one-third that of other roof-covering materials and may even be only 4.7 oz./sq. ft., is of particular advantage in saving on-costs of transport, labour and dead loads. Aluminium sheets are laid in the same way as those of zinc and copper, and the corrugated type as galvanised sheets. Aluminium alloy screws, rivets, etc., are recommended for fixing. It is also advisable to use aluminium gutters and rain water heads in conjunction with aluminium roofing, but otherwise a layer of bituminous paint should provide sufficient protection against electrolytic action.

Aluminium sheet and foil are used in conjunction with bitumen and insulating materials for roof deckings. "Bitumetal" units are made of aluminium-magnesium alloys and are jointed together in such a way as to permit movement of the structure and roof-covering materials. The "Bitumetal" roof consists of multi-layer flexible roofing, ¼ in. insulation, one coat of bitumen, and aluminium troughs resting on steel or aluminium angle roof members. The

units are manufactured in 2-ft. widths spanning up to 10 ft. and the complete roofing weighs between 4-8 lb. per sq. ft. In the "Thermolok" roof, aluminium bar sections of a heavy gauge metal are fixed to the main structure and covered by interlocking 4 ft. 6 in. by 1 ft. aluminium deck plates, covered with insulating materials bonded in bitumen compound. The decking is finished with two layers of bitumen and the weight of this composite type of roofing is only between 3.87 and 4.05 lb./sq. ft.

Windows and Glazing Bars

Aluminium window frames are well known and experience of many years has provided a basis for an assessment of their value as well as useful information on the problem of maintenance. Protection by painting has been found to be generally unnecessary, but the natural accumulation of dirt and grime in the smoke-polluted atmosphere of industrial towns, which produces a darkening of the colour of the metal, makes occasional cleaning necessary. Cleaning solutions, such as a mixture of methylated spirits and whiting, can be used to bring the metal to its original condition; it is essential, however, to apply a thin layer of vaseline, lanoline or waxy compound afterwards to seal the slightly porous oxide coating produced by the anodic process. Contact of aluminium with other metals externally should be avoided; electrolytic corrosion can be prevented by insulating aluminium with a coating of bituminous paint.

The lightness of aluminium glazing bars is a valuable property in large glazed roof areas. Alloys of high corrosion resistance are employed with suitable cover strips and various types of patent clips.

R.W. Goods

Aluminium alloy rain water goods are used with aluminium roofing and other covering materials. They are practically non-corroding and in this respect are superior to cast iron. The material, which is tough and less liable to be damaged, facilitates better fits for joints. The rigidity of gutters can be improved by the incorporation in the design of beaded edges. Down pipes are manufactured in lengths up to 16 ft., a length which makes it possible to reduce the number of joints in a single length of pipe. In country areas painting is unnecessary, but in industrial towns and in proximity to the sea a primer of zinc chromate followed by finishing coats is recommended. Rain-water goods, including gutters, down pipes and fittings are manufactured in accordance with British Standard 1430 and 1543.

Miscellaneous Applications

There is a multitude of miscellaneous applications of aluminium in building, but it is possible to mention only some of them within the short space here available. Many composition flooring materials require protection in positions exposed to heavy wear, like stair nosings, skirtings, etc., and extruded aluminium nosings with a special groove for non-slip material may be fixed to stairs to increase durability. Aluminium railings and grilles are usually manufactured from drawn tubes or extruded sections and fitted or welded together. Cast or hand-wrought balusters, panels and grilles are designed for more intricate work; hand-rails of plain aluminium tubing or solid round, hexagonal, flat or other standard sections are fixed on aluminium brackets or supported on balusters, and ends of balusters or hand-rails which are in contact with wet concrete, mortar or plaster must be protected with bituminous paint.

Heat-Insulating Foil

The bright polished surface of aluminium has the property of reducing heat transmission by reflecting the radiant heat which strikes the surface. The radiant heat generated in the building can only be transmitted very slowly due to the same reflective property of aluminium. Aluminium foil for heat insulation is manufactured in crampled or corrugated form, or combined with paper. Two sheets, one corrugated to a depth of ¼ in. and the other flat, wired together with staples, are combined with fibre-boards for insulation of walls and roofs. A six-ply reinforced water-proof paper with polished aluminium foil bonded to one or both sides of it, is fixed on battens inside cavity walls. The foil provides a high quality reflective insulation, as indicated by the following figures: for 2-in. air space the conductivity is 1.25, while with aluminium foil the conductivity is reduced to 0.46-0.36. Aluminium foil bonded to Kraft paper is also employed for roof insulation.

OBITUARY

Frank Roscoe, A.R.I.B.A.

We regret to announce the death of Mr. Frank Roscoe, A.R.I.B.A., A.A.Dipl., of Berkhamstead. Mr. Roscoe, who was born in 1902, was trained at the Architectural Association's School, Bedford-square, and started practice about 1927. He was at one time a teacher of architecture at the Northern Polytechnic, Holloway. His design for the R.I.B.A. building competition (entered as Roscoe and Wilson) was placed third. Mr. Roscoe practised in London and Berkhamstead.

L. E. Hetherington, L.R.I.B.A.

The death has occurred at Hexham, Northumberland, of Mr. L. E. Hetherington, L.R.I.B.A., who practised as an architect at Newcastle-on-Tyne until a few years ago. He had designed many buildings at Hexham and other Tyneside towns.

BROMMA AIRPORT, STOCKHOLM. Architect: Professor Paul Hedquist. This was one of the photographs on view at the Architecture of Transport Exhibition at the R.I.B.A., which closed on March 22

ARCHITECTS' REGISTRATION COUNCIL

Mr. Tatchell's Retirement

A TOTAL of 285 applicants was admitted to the Register at the 76th ordinary meeting of the Architects' Registration Council of the United Kingdom, held at 66, Portland-place on March 16. Mr. Sydney Tatchell, C.B.E., presided.

Of these 285 applicants the Admission Committee reported that 283 qualified by examination under section 6 (1) (c) of the Principal Act, and two qualified under section 6 (1) (d) of the Principal Act, and under Regulation 26 (4)—Architects resigned, seeking readmission.

In that part of the report of the Board of Architectural Education which dealt with the Maintenance Scholarship Fund, the Board recommended that the Panel of Examiners should be prepared to increase grants in individual cases in which financial hardship was clearly proved, and further recommended that the Panel of Examiners should increase the number of annual awards, provided that could be done without materially affecting the satisfactory standard which had hitherto been maintained. Both these recommendations were agreed by the Council.

The Finance and General Purposes Committee reported that up to February 23, 78 per cent. of the retention fees due had been paid, compared with 79 per cent. for the same period in 1950.

The first section of the report submitted by the Professional Purposes Committee was on the subject of Removals from the Register —Form of Initial Resolution. In this the Committee reported that they had considered the form of resolution passed by the Council in which the Registrar was directed to notify an architect found guilty by the Discipline Committee of the intention of the Council to remove his name from the Register. The present form of the resolution is settled under paragraph 12 of the Disciplinary Regulations. The Committee recommended that there should be an addition to the resolution in the following terms: *And further Resolved that the Council, bearing in mind that under the terms of Section 7 of the Principal Act the period of removal from the Register cannot be determined until the resolution of removal is confirmed, are of opinion, as at present advised and subject to any representations that may be made by A.B., that the appropriate period of removal would be . . . months/years.* The Council agreed to the text of this recommendation, but it was decided that it should be a separate resolution and not, as it appeared to be, a continuation of the first.

With reference to Regulation 8 (1) which states that at the annual meeting of the Council held in the month of March in every year, the members present shall elect a Chairman and a Vice-Chairman. . . . Mr. GORDON W. JACKSON moved that after the word "Vice-Chairman" in this Regulation the following be inserted: *both of whom shall be members of the Council. No member shall hold the position of Chairman or Vice-Chairman for more than two consecutive years.* Mr. Jackson thought that both of these positions should be considered as honours which could be bestowed on a member for his services to the Council. MR. W. H. SCANLAN, who seconded the motion, said he supported Mr. Jackson because he thought it would be useful to the Council if they had progressive changes. He also thought that such a step would result in wide benefit to the Council and to the Profession as a whole. Mr. Sydney Tatchell pointed out that the Council was free to elect its Chairman every year and he thought it was possible that at the end of a year the Council might not like their Chairman and, further, that the Chairman might not like his Council. Mr. Scanlan said that if Mr. Jackson's motion was passed the Council would still be permitted to elect a new Chairman after a year, and if the Chairman did not like his Council he would be free to retire after a year. MR. KENNETH M. B. CROSS, in opposing the motion, said even if it were passed it would have very little effect. He could see no reason why the Council should alter the fact that they were able to elect a Chairman each year, and he thought that if one were to hold it for a longer period there would be continuity of policy. He considered that the Council might be fortunate enough to get a Chairman with high qualifications, in which case it would be a calamity if they had to lose him after two years. In supporting Mr. Jackson's views that the positions of Chairman and Vice-Chairman should be considered as honours, A MEMBER said there were a number of men on the Council who had made a very great service to the Council and he thought this was the only way in which they could show their appreciation for such services. As this was Mr. Tatchell's last meeting as Chairman, Mr. Jackson said that in view of the occasion he would withdraw the motion.

Suggested Code

With regard to the letter which the Registrar had received from Mr. Niel Martin-Kaye, F.R.I.B.A., A.A.Dipl. (a copy of which appeared in *The Builder* of March 16), MAJOR G. B. J. ATHOE pointed out that he was one of the members who drafted the suggested code and that it took them some time to come to a decision on it, but he did think that there was something in Mr. Martin-Kaye's request for more publicity before such a measure was brought in. He could appreciate the opinions of registered architects who, he thought, felt that they had not been told of some matter which was being considered. In future, he believed that there would be something to be said for greater publicity of any matters which were being considered. Mr. Scanlan said he supported the Registrar's draft letter in reply to Mr. Martin-Kaye and asked if a copy could be sent to the Press in view of a leading article which appeared in a paper that week (*The Builder*, March 16). The Chairman replied that that was to be done.

After the ordinary meeting the Council members adjourned to the Henry Jarvis Memorial Room, where a clock, subscribed for by the constituent bodies of the Council, was presented to Mr. Sydney Tatchell, in recognition of his service in the chair from 1935-51. Major Athoe, who made the presentation, said that he did not know any other man on the Council or any other person he had met who could hold the chair for 16 years. In his reply, Mr. Tatchell said that he was immensely touched by the confidence and support which the Council had given him for so many years.

At the annual meeting which followed, Mr. E. D. Jefferiss-Mathews, O.B.E., F.R.I.B.A., A.R.I.C.S., was elected Chairman and Mr Denis Poulton, F.R.I.B.A., Vice-Chairman.

INCREASING HOUSING PRODUCTION

Pamphlet by Mr. Ernest Marples, M.P.

A NUMBER of suggestions for increasing housing production are put forward by Mr. Ernest Marples, M.P., in a pamphlet entitled "Housing" which has been issued by the Conservative Political Centre. The author states that the pamphlet represents his own personal views. His principal aim has been to prove that it is possible to build, with the existing labour force and improved efficiency, more than the fixed programme of 200,000 a year. Whatever the housing target may be, he says, the two most important factors are efficient production and freedom from political interference.

It is pointed out that by the adoption of up-to-date methods the construction of primary schools has increased by 50 per cent. in two years, and the question is asked why similar methods cannot be applied to housing. On the timber question, the figure of £20 million, which was the estimated cost of providing timber for an extra 100,000 houses, is compared with £93½ millions spent on tobacco alone in 1949, and the suggestion is made that foreign exchange should be more wisely spent. The supply of cement and bricks is examined, and the author points to where economies might be effected or production increased.

In dealing with the problem of labour, Mr. Marples emphasises the importance of payment by results, and suggests that modern educational methods should enable apprentices to become adequately trained in a period of four years or less and thus increase the number of operatives available for housing work. More use could be made, he believes, of unskilled labour, and non-traditional houses which do not need bricks could be erected.

In a section in which he outlines what he considers to be the way to the achievement of 300,000 houses a year, the author states: "Since 1938 industrial output per head in this country has risen by eight per cent. But in building it has fallen by over 20 per cent. In America building output per head is 50 per cent. higher than in this country."

Britain's low rate of building productivity is attributed mainly to the system of rigid controls which is at present in force. The industry, it is stated, is working in a "strait-jacket." On this matter the author concludes that "there is no hope of the building industry returning to its old level of efficiency until the Government takes action to make sure its controls do not hinder the day-to-day practical operations of building."

Mr. Marples makes two "respectful" recommendations to the architectural professions: (1) They should work on sites, mix and live with contractors. Only directly tackling a job makes us fully understand its difficulties and its headaches. (2) Practical work on sites, building costs and standardisation, should in future have a larger place in their professional training.

The author supports the idea of smaller houses in which good living conditions are not reduced. In this connection he refers to the "Low-Cost Housing Competition," organised recently by *The Builder*, which produced 322 designs of houses, each of which could be built for less than £1,000. This proves, he says, that technicians are experimenting with smaller and simpler houses.

SOUND INSULATION AT FESTIVAL HALL

Successful Tests Carried Out

THE chief problem of sound insulation in constructing the Royal Festival Hall was to exclude the noise of trains on Hungerford-bridge. The Building Research Station, in conjunction with the acoustic consultant for the hall, Mr. Hope Bagenal, F.R.I.B.A., was asked to make measurements of the noise on the site and to give an opinion on the practicability of measures for sound insulation. It was found that the noise levels were quite high—of the order of 90 decibels—particularly at the low frequencies which are the most difficult to insulate. Sound insulation is now, however, well understood and the B.R.S. gave the opinion that the train noises could be kept out without serious difficulty.

There was also at this site a problem of underground train noise. Some lines pass directly under the hall and could be expected to cause vibration, and measurements were made in basements of existing buildings on the site. Vibrations of this kind would be exceedingly difficult if not impossible to insulate in a building, but it was concluded at the time that they were not likely to cause annoyance in the completed hall.

The precautions necessary to exclude the noise of the trains on Hungerford-bridge played a large part in the design of the building from the outset, and the tactics of defence were as follows.

Double Construction

The hall itself was to have a double construction, both for walls and roof. The lower parts containing the entrances automatically get some extra protection from the surrounding structure of foyers, offices, etc., but to improve their usefulness for insulation, the ceilings of large parts of the foyers were treated with special sound absorbents, especially on the parts of the building nearest the bridge itself. These could be counted upon to reduce noise appreciably but not sufficiently, and double-door systems were provided for entry to the hall itself to attain the required reduction. The lobbies between the sets of double-doors were then treated with sound absorbents to ensure that they, too, acted so far as possible as sound-locks. Finally there was the ventilation system to consider, because the large openings necessary for the intake of air would have admitted noise freely. This was avoided by inserting in the entry to the ducts a series of sound absorbent splitters such as are used to reduce the noise of aero-engine test houses.

The most doubtful part of these precautions, and the most important, was the double shell which is the only protection for the exposed part of the hall. It was thought desirable to build a small test structure on the site, using the same construction as that proposed for the walls and roof. This was constructed while the foundations of the hall were being built and was subjected to many measurements. The walls proved adequate, but modifications to the roof were found necessary to make it equally good. On the basis of these results the details for the actual construction were completed.

The walls consist of two 10-in. thicknesses of concrete separated by a cavity which is lined with wood wool as a sound absorbent, while the roof consists of two layers of concrete of about half this thickness separated by a much larger air space, the upper leaf being carried on the lower by brick sleeper-walls, but insulated from it by a layer of glass wool. Measurements on the site since the completion of the building have shown that this part of the construction is giving the insulation expected of it.

Acoustic Checks

The present time is being devoted to acoustic checks and the tuning of the hall, for which purposes some test concerts are being held. At the first of these the audience was enjoined to keep silent on two occasions for two minutes, which it did with great success, there being not one cough, while a special team of listeners at various places in the hall tried to detect train noises. It was evident from the results that the noise of trains from Hungerford-bridge has, in fact, been successfully excluded from the concert hall.

At the same time an appraisal was made of the noise from the underground trains. This is just audible under quiet conditions and computations suggest that for about ten seconds in every ten minutes its loudness may reach that of the noise from a very attentive audience. This means that if a quiet passage of music should happen to coincide with a passing train, it might just be detected by listeners if they were, in fact, trying to hear the trains rather than the music. It is not thought that this will be a cause of annoyance.

Subsequent studies in other concert halls have shown that they suffer from intruding noise to much greater extent than was supposed at the time that the Festival Hall was designed, and much more careful exclusion of noise would be desirable in all future concert hall structures built in the middle of a city. The low frequency noise which is to be found near a busy traffic route is, in fact, little different in loudness from the noise of the trains on Hungerford-bridge, and the latter originally seemed exceptional chiefly because the district is otherwise relatively quiet.

VIRTUES OF TIMBER

Importance of Stiffness per Unit of Weight

SPEAKING at the Imperial Forestry Institute, Oxford, recently, MR. PHILLIP O. REECE, Director of the Timber Development Association, said that the chief structural virtue of timber lay in its stiffness per unit of weight, a point of great importance in modern structural engineering, and showed how this was due to the evolution of wood tissue in the growing tree, a factor which also accounted for the marked ability of timber to withstand high stresses for short periods of time.

He also demonstrated how methods of connection and assembly were of greater importance to the comparatively light structures of modern times than they were to the more massive structures of the past, and dealt with modern developments in this technique as applied to timber.

Of particular interest was the description of the glued laminated timber arches which formed the significant feature for the Waterloo entrance to the South Bank Festival site. This form of construction, although comparatively new to the United Kingdom, had already made important contributions to the design of assembly halls and commercial greenhouses. Its further application to school and agricultural buildings was foreshadowed, in the belief that the demands which would now be made on materials such as steel and non-ferrous metals would permit a more rapid development of this kind of timber construction.

MODULAR CO-ORDINATION

B.S.I. Committee's First Report

THE British Standards Institution has published the first report* of a committee under the chairmanship of Mr. S. Rowland Pierce, F.R.I.B.A., on modular co-ordination. The committee formed the opinion that the adoption of modular co-ordination would have many advantages and should contribute to a reduction of the overall cost of building. It is also maintained that the use of a guiding modular framework, besides assisting design and planning on the drawing-board, would considerably help site work and the prefabrication of components. Eventually a modular system, if adopted, would become the basic common reference for the co-ordination of size-standards for all building materials and components or for the setting up of new standards.

After examination of possible disadvantages, the committee concluded that the introduction of modular co-ordination would not impose undue restrictions on the designer nor would it lead to stereotyped buildings if the modular units were correctly chosen and used.

The committee examined carefully the range of modular units in use or under discussion in other countries and concluded that a small unit, such as 4 in. or 10 centimetres, had grave disadvantages; the latter might, however, be overcome by the adoption of a larger unit of about 3 ft. to 3 ft. 4 in. The committee, therefore, concentrated on detailed applications of horizontal (plan) modules of both 3 ft. and 3 ft. 4 in., and reached the conclusion that the larger unit offered greater advantages both from the design aspect and in practical applications. A very small unit is considered to be equally undesirable for height (sectional) use; a proposal has been put forward, therefore, for preferred units based on increments of 8 in., which, it will be observed, is an even fraction of the proposed plan module of 3 ft. 4 in.

The committee has now reached a stage when a considerable amount of work, both on paper and in the form of practical experiments, will be needed to proceed further; it has been thought desirable, therefore, to inform the building industry of the conclusions so far reached and to obtain reactions and comments which may assist the continuation of the work.

The committee wishes to point out that, at the moment, it is not in the position to inform manufacturers of precise dimensions to which materials or components should be produced to fit the suggested modules. To reach such precision involves a major task with detailed examination of existing standards for each component and material, and it is thought wise, at this stage, to obtain wider views on the proposals as a whole before embarking on costly investigations covering such wide fields.

* Copies of the First Report on Modular Co-ordination (B.S.1708) are obtainable from the British Standards Institution Sales Department, 24, Victoria-street, London, S.W.1, price 2s. 6d, post free.

HOUSING IN THE NORTH COTSWOLDS

A Housing Centre Talk

AS chairman of the Housing Development Committee of the North Cotswold Rural District Council, MRS. SPURGIN, J.P., had an interesting story to tell the Housing Centre, on February 13, of how her local authority is tackling housing problems in the Gloucestershire countryside.

The Council's area, she said, had a population which had grown from 16,850 in 1945 to approximately 20,000 to-day, on 86,203 acres of beautiful agricultural land. Since the war the Council had built houses in 22 of the 37 parishes. The villages were really hamlets, mostly composed of stone cottages or mansions grouped around a green.

The need for scattered building was one of the Council's headaches and took up much of their time. A certain amount of scattered building was essential in a sparsely inhabited agricultural district such as theirs. Since the war, continued Mrs. Spurgin, the Council had built 256 houses, bringing the total of Council houses to 898. The rate of building since the war had been 4.3 a month or one to every 80 people. The housing demand was about 893; very much where it was at the beginning of the war.

The Council had built in a variety of styles; prefabs, Aireys, Swedish, Cornish units, grey brick and reconstructed and real stone houses. They had also reconstructed 34 Ministry of Works' huts, alleviated the lot of squatters, and spent labour, time and money on the maintenance of their older houses. The maintenance cost had risen from £3 to £6 before the war to £13 to-day per house per annum. The overall size of a three-bedroomed house (not including outbuildings) was 928 to 930 sq. ft., rising, by Ministry encouragement, to 950, but lately dropping, to meet the increased costs, to 850. She hoped that by proper planning the Council would not need to reduce their good standards, even if they shed "frills." Building costs varied from £1,277 for the Swedish houses to £1,469 for the Airey, and £1,518 for the traditional grey brick (costing £1,064 in 1945).

The Council had not yet completed any stone houses but was building some 40. These were at Campden, Stow, Slaughter, Swill and in Guiting and Bourton-on-the-Hill. The extra cost of building in real stone was probably £260. For Cotswold facing bricks compared with grey bricks with colour washes (which were now being abandoned) the extra cost was £100 per pair and for reconstructed stone £204 per pair. Rents of three-bedroomed houses varied from 10s. minimum, with rates 3s. 7d., to 18s. minimum, with rates 4s., for the Cornish unit and 17s. for the traditional house.

Cottages at Blockley, Gloucestershire, in reconstructed stone

Sites had been prepared in 14 villages. Some, owing to the slow rate of building, were not remunerative to the Council. Building was of a density of eight to the acre, with a tendency to increase; big gardens were not popular with everyone.

Two consultant architects were engaged: Thomas Rayson, F.R.I.B.A., of Oxford, for the southern part; Thomas Bateman, A.R.I.B.A., for the north. The Council had appointed a clerk of works to watch the construction under these architects and he reported direct to the committee. On being completed, the houses were taken over by the housing maintenance officer on behalf of the Housing Committee.

The Housing Development Committee's plans, said Mrs. Spurgin, were fluid. Even if there was an overall layout, the actual plans must constantly be redesigned to meet changes in cost and need. With the uneven country, prefabricated houses were expensive to adapt. The Council tried to avoid saddling posterity with high maintenance charges. There was a minimum of paintwork, no more colour wash to be rewashed, and one-pipe drainage to minimise the frost bursts; these were some examples. The design and texture of construction were shown in careful choice of tiles, materials, colours, roof pitch and in traditional elevation.

Practically all the villages had main water, electricity and gas and a majority were sewered. The Council provided airing cupboards, two sinks, and ample room for prams, vegetables and tools. The outbuildings of all the traditional houses were joined to the house and, with the curtain walls, seemed to anchor the houses to the contours of the hills.

The three most perplexing problems in connection with housing which confronted the Council, said Mrs. Spurgin, were: the yearly allocation of houses by the Ministry; the siting of the small allocations each year; and the difficulty of absorbing the offers of non-traditional houses in an area which was scheduled as "one of special landscape value, meriting special attention," according to the county planning report.

The allocation was based on an index figure which was compiled from a labour potential. If the Council had difficulty in persuading builders to tender for outlying villages (places where the Council really tried to meet the demand) these unfulfilled tenders counted against the next allocation.

On the subject of the siting of small allocations, Mrs. Spurgin criticised the way in which allocations were often divided between traditional and non-traditional houses. The third conundrum was the extra "take-them-or-leave-them" offer of non-traditional houses in an area in which the county planning committee had given such clear directions about preserving the "special landscape value" of the area. Only in a few places could prefabrication be hidden but, in view of the crying human need, the Council had built them. It was said that these houses saved labour and were more quickly erected; there was still the factory time to be added. This might be true on a flat site, where a minimum of 30 was being put up, but not with small quantities on uneven, abnormal fields.

In conclusion, Mrs. Spurgin said they felt they had achieved improved standards, much helped by the Ministry of Health's Manual and pamphlets, but, perhaps, they could get on more quickly without so much administrative machinery.

Oxford Architectural History

From July 1 to August 4 next, students of architecture from Britain and overseas will have an opportunity to study and measure many examples of historic English architecture at Oxford, and to live in college at Magdalen. Arrangements have been made by the Oxford Summer School Committee for students who may wish to study form and construction, entailing the preparation of measured sketches, and of some finished drawings, of such features as doorways, wrought-iron work, and fittings in college halls and chapels. During the course, which forms part of Oxford's Festival of Britain programmes, distinguished architects and specialists will lecture on different aspects of Oxford buildings.

Further details and application forms can be obtained from the joint honorary secretaries of the organising committee, Messrs. E. Lassetter, L.R.I.B.A., Somerset House, Reading, and J. Brosgall, Shire Hall, Reading.

PROBLEMS OF A DEVELOPMENT PLAN

Mr. Doubleday's Address to the R.I.C.S.

PROBLEMS which had arisen during the preparation of the development plan for Hertfordshire, where four new towns and two London County Council "quasi" satellites are being built, and sand and gravel is being worked on a vast scale, formed the basis of a paper given before the Royal Institution of Chartered Surveyors by MR. E. H. DOUBLEDAY, F.R.I.C.S., in London, on February 19.

The first problem that faced the local planning authority was to organise its new machinery to run at full pressure over a wide area during the three-year period allowed by the Act for the preparation of the first development plan, said Mr. Doubleday. The collection of survey material and data was not a difficult technical problem, but rather one of patient organisation and careful working which any reasonably efficient body could cope with, given sufficient time to do the job satisfactorily.

With the survey completed, the next problem was that of map notation and the printing bottleneck which, in itself, could throw out of gear all the best intentions of the planning officer and his staff. They were obliged on this account drastically to curtail the amount and form of traditional notation and to adopt a "battledress" edition of the full notation.

"Compared with the pre-war statutory planning scheme, the modern development plan is much wider and more embracing in scope, and I doubt whether any single interest—or groups of interests, for that matter—affected by the plan's proposals can fully grasp all the underlying reasons for the objectives which the local planning authority is striving to attain," Mr. Doubleday continued. "This point was very much in evidence during the inquiries into the 'blitz' reconstruction schemes and the new town outline plans, where fewer objections would have been made had the reasons for the authority's proposals been fully appreciated beforehand. The small-scale outline map is an attempt to overcome the difficulty by presenting a wide view of future developments, with the supporting reasons."

Balanced Development

Much had been heard recently about the "balanced" community, for which local planning authorities should provide in their plans. This word did not occur very frequently in pre-war planning jargon, and one wondered whether it was sometimes used in an attempt to escape from recognising the unpleasant facts of difficult economic conditions.

A distinguished municipal housing architect, Sir Lancelot Keay, had stressed the inability of local authorities between the two world wars to undertake balanced development at a time when municipal development was responsible for only one house of every four built in the country—a situation which was reversed to-day.

"I believe that we are deluding ourselves if we fail to recognise that there are, and will continue to be, fewer elements to balance than there were even 15 years ago," the speaker continued.

"The emphasis for variety is now placed more upon skilful design and layout than upon a wide range of houses. Relaxations of building licence restrictions on the number and sizes of houses which can be built privately in areas where development on a large scale is going ahead, e.g. new towns, would be a welcome step towards breaking the monotony of small single-class development, and would help the resources of the hard-pressed receiving authority, and incidentally would save the tax-payer money.

"Two main problems face the planner under this heading of the development plan. They are the inter-related problems of housing needs and standards. The size of the local housing list is quoted extensively by most local authorities in support of their housing needs. I hold the view that the housing list cannot always be regarded as the true criterion of the local housing need, upon which the area of land required for housing can be assessed by the planning authority.

Housing Lists Pruned

"I recently had to consider the amount of land to be set aside for development in part of Hertfordshire where several adjoining authorities made up a population of nearly 150,000. Multiple registration was suspected, and, with the help of the local housing authorities, the housing lists were examined under the following heads:—(*a*) persons on the housing list of an adjoining authority; (*b*) persons living in a house, who require a bigger or smaller one; (*c*) persons living in redevelopment areas for whom provision will ultimately be made in redevelopment schemes; (*d*) persons wishing to move into the area from outside; (*e*) persons who would build privately if they could obtain a building licence, and (*f*) single persons and engaged couples (the latter in anticipation of need).

"A start was made on the housing list of the largest authority, with 3,100 entries, and it was found that, after careful screening on the lines mentioned, this figure was reduced to 2,050, or a reduction of about one-third."

An interesting point which emerged from studying the housing lists of several districts was the extent of voluntary migration which was still quietly and persistently taking place. This outward, and socially upward, movement represented the eternal desire of people to better themselves and in some areas amounted to over a quarter of the local housing list.

In Hertfordshire, where the pressure upon agricultural land was extremely great, an attempt had been made to prescribe overall standards of development. The residential areas in the development plan and town maps would be based upon these standards, which varied those set out in the Greater London plan and prescribed net densities considered suitable to the housing needs of the particular locality. The open space reservations were on the same basis as the Greater London plan, but the school sites were bigger, due to the Minister of Education's requirements issued after that Plan was published. By this means, it was possible closely to estimate the amount of land required to be set aside in the development plan for development.

While information concerning the present state of employment, the industrial structure of an area, the stability of employment and the future supply and demand for labour was very important to a planning authority, it was hardly sufficient, even with the additional general information promised by the Ministry's Circular No. 40, to form a basis upon which the authority could construct a positive programme of industrial development in its area. The vital missing link which was badly needed to bridge the gap between survey and action was a declaration of the outline of policy which the Board of Trade had been following since 1948, and its projection for the immediate future.

Two other important points arose concerning the distribution of industry. The first was the apparent absence of any machinery that would ensure that plans to provide industry in any particular place proceeded in step with plans to provide services and houses. As yet, there was no connecting link between the Government Departments concerned with distribution of industry on a national scale, the local planning authority concerned with the selection and siting of industry in its area, and the developing authorities also concerned with these issues and with the provision of industry to employ incoming population.

The second point was the difficulty caused by the total lack of liaison between the Board of Trade and the local planning authority on industrial development applications to implement the development plan proposals.

"Although the Act gives the local planning authority an unfettered discretion to decide an application where the Board of Trade has already granted a certificate, the local planning authority are, nonetheless, prejudiced in that it is much more difficult for them to turn down a proposal on the grounds that it is unsuitable in the area suggested, when the Board of Trade have already, without consultation with them, issued a certificate that the location of the industry in that area is consistent with national policy on industrial distribution," continued Mr. Doubleday. "Although the Board of Trade, in reaching a decision to issue such a certificate, may have the advice of the Ministry of Local Government and Planning, that advice could not be as closely attuned to all the relevant considerations as the views of the local planning authority, who are not consulted by the Ministry. Furthermore, the taking of that advice means that, if there is an appeal from the local planning authority's decision to refuse permission, that appeal is decided by the Minister who has already given advice on the issues upon which he has to judge.

"It would seem better that the Board of Trade should consider the views of the local planning authority at the time when they consider the application for their industrial certificate, so that they may be aware of any overriding objection to locating the industry under consideration in the area proposed.

Road Construction

"There were no votes on roads, which would never rank as high as education, public health and the social services, in claims upon the Treasury. Members would doubtless be aware of the serious depletion of the funds available for road maintenance, let alone new construction. The Government's White Paper on Capital Investment held out no hope of improvement, and the stark prospect must be faced that, unless something quite unforseeable happened, very few of the new radial or ring roads or, indeed, local

by-passes were likely to be constructed within the next 20 years."

In developed areas, landowners and tenants, planning and highway authorities, had a right to a firm decision upon the route and width of road proposed even though the period of construction might be uncertain. Outside 20 years, he doubted the wisdom, save in exceptional circumstances, of including roads shown for construction through existing built-up areas, for who could say with any assurance what their precise information would be if construction was delayed until after that period.

Land Designation

"Designation of land for compulsory purchase is a new feature of the planning machinery and will be welcomed. Land may be designated only if it is likely to be acquired within ten years, or seven years in the case of agricultural land. Designation enables a firm programme of development for a reasonable period ahead to be given to owners and developers," Mr. Doubleday continued.

"The definition of a site need not, and frequently cannot be so precise on boundaries, as designation. It also does not carry the threat of early compulsory purchase.

"Definition has to be used for individual sites in built-up areas partly because of the small scale used for the county development plan, but principally because of the time which is likely to elapse before the development takes place. In rural areas on the 1-in. scale map definition is impossible, and designation must be resorted to.

"Unlike 'definition,' 'designation' of a site can be used in any part of the county and is shown on specially prepared plans. When a site is designated in the development plan, the local planning authority are in fact saying, first, that they intend to purchase within five years (the development plan is reviewed every five years and further designation can be included on each review) and, secondly, that they can prove, as if at a compulsory purchase order inquiry, the need for the site for the use to which it will be put. As with definition, the owner can in some cases require the local authority to buy him out before the land is required."

An important point arose on definition or designation which also touched upon the programme. The Act required that development plans should be submitted to the Minister by July 1, 1951, "or within such extended period as the Minister may in any particular case allow." It was unlikely that all local planning authorities would be in a position to submit their development plans by next July and submissions of development plans to the Minister from July onwards were therefore to be expected, and it was here that the date of effectiveness would vary.

"The power to 'define' or 'designate' becomes exercisable when the local planning authority has approved the development plan and submitted it to the Minister for approval, and not before. The definition or designation takes effect when the Minister confirms the development plan after a local inquiry which includes inquiry into the definition or designation. If, therefore, the development plan is not likely to be submitted to the Minister until early in 1952, its examination and subsequent approval, with or without modifications, by the Minister is likely to take several months. Land which in this case is likely to be required, say, before 1953, should be purchased under other powers and not defined or designated in the development plan.

"Similarly, the programme of works should be prepared so that the timing begins to run from the date when the Minister's approval of the development plan is likely to be forthcoming. It should not run from the date when that particular part of the development plan is prepared."

Development Programme

The local planning authority's programme of development and the way in which it was prepared would readily show to an experienced eye whether the plan was well and truly founded. "There is no lack of development waiting to be carried out, but resources, national and local, impose limitations on what can be put in hand at any one time," he said. "Provided the external circumstances remain substantially unchanged, I think that the estimate for the first five years of the approved plan will be fairly definite. Allowing for the time taken for the development plan to pass through its formal stages to approval, this can mean in practice that a programme of six or seven years ahead can be forecast with reasonable accuracy. Beyond that time, the programme should be considered an indication of the areas and order in which development should proceed, bearing in mind the opportunity to bring the programme up to date every five years.

"The aim of the programme is to produce a schedule of works which can be shown to be capable of execution within 20 years. The limiting factors are labour, materials and finance. Nationally, labour is probably regarded as the ruling factor. Locally, finance or the capacity and willingness of the ratepayers to pay will be more readily appreciated."

The amount of development required in the county was being assessed from the planning survey on the basis of (*a*) the amount of house building and related works; (*b*) the amount of industrial building; (*c*) number of schools required; (*d*) amount of other building and civil engineering work necessary; and (*e*) the extent of open space provision. Priority for the various areas is then being determined in the following order :—(1) housing; (2) public utilities; (3) industry and associated buildings; (4) schools; (5) new shops and commercial buildings; (6) open spaces; (7) other community buildings; (8) other forms of building works.

Burden of Consultations

"Anyone who has not been responsible for seeing that all consultations, statutory and otherwise, are carried out by the local planning authority at the various stages of the development plan, can have little idea of the enormous burden and limitations which this duty imposes upon the local planning authority anxious to comply with the time limits of the Act," Mr. Doubleday continued. "Authorities agree that these consultations, which are so important to 'put the plan over,' must be carried out so that the ordinary man may understand the approach adopted by the local planning authority on matters which vitally affect his own and his children's future. The problem is how to do this work simply, effectively and as quickly as possible."

The straightforward and well-tried method of depositing plans, supplemented by an exhibition where this could be arranged, was well known, but did this explain all the objectives which the local planning authority was striving to attain? Several authorities had adopted the method of putting out a pilot or explanatory statement of the background against which the development plan was being prepared, and some of these statements set out the policy decisions already taken by the planning authority. In Hertfordshire, they printed and distributed 3,000 copies to interested departments, boards, local authorities (including parish councils), new town development corporations, amenity, business and industrial societies, etc. The local Press also helped to explain the background of the county development plan, so that in Hertfordshire, few people should be able to complain that they had not had the opportunity to see the development plan, and to have it explained in its early stages before it was sent to the Minister for approval.

INTERNATIONAL UNION OF ARCHITECTS

Further Details of Second Congress

MR. ANTHONY M. CHITTY, F.R.I.B.A., has been appointed co-ordinator for the session on housing (covering all aspects from layout in the city to domestic equipment of an individual house) in connection with the Second Congress of the International Union of Architects which will take place from September 23 to 30 next, at Rabat, Morocco. M. Alexandre Courtois, President du Conseil Superieur de l'Ordre des Architectes du Maroc, will preside.

It is open to any individual member of the R.I.B.A. to contribute material on any of the subjects on the agenda [described in *The Builder* of February 2]. In no case should the contributions exceed 1,000 words. Contributions should be addressed to the Secretary, United Kingdom Committee, I.U.A., c/o R.I.B.A., 66, Portland-place, W.1., and must reach him not later than June 1. They must be typed in duplicate.

In addition to submitting contributions, as described above, architects proposing to attend the Congress may contribute to the discussion at any meeting, but are required to give prior notice of their intention to do so, providing at the same time a precis of their intended remarks. Such notice and precis should be sent to the Secretary, U.K. Committee, for forwarding.

The Congress will be preceded by an Assembly at Casablanca from September 20 to 23. An international architectural exhibition is being arranged simultaneously with the Congress and the British section is contributing an exhibition of some 45 panels entitled "In Britain To-day."

Seven tours of places of interest in French North Africa are being arranged by the International Union in conjunction with the Congress. Particulars may be obtained from the Organising Secretary, International Union of Architects Congress, 2, Rue Goethe, Paris XVI.

Messrs. Thomas Cook and Son have been appointed travel agents by the International Union, and conversations have been held with their London office with a view to Messrs. Cook accepting individual applications for inclusion in a party for which special travel arrangements will be made. Those proposing to attend the Congress should send their names and addresses to the Secretary, U.K. Committee, and arrangements will be made for Messrs. Cook to get into touch with them.

Relationships between the Quantity Surveyor and Architect, Contractor and Client

"Understanding the Other Fellow's Problems"

IF the architect would call the quantity surveyor into consultation at a very much earlier stage in the proceedings than is customary, it would greatly assist in solving outstanding difficulties, suggested MR. H. A. ACKLAND, O.B.E., F.R.I.C.S., in a talk at a general meeting of quantity surveyors held at the R.I.C.S., Great George-street, London, on March 14. Mr. Ackland was speaking on the "Relationships between the Quantity Surveyor and Architect, Contractor and Client." Following are extracts from his remarks:—

Architects, contractors and quantity surveyors alike have all recently been the subject of exhortation, admonition, advice and dictation from all directions. We have had the reports of Working Parties, Productivity Teams, articles in technical journals and other dissertations, and out of this welter there has certainly come some good. The cardinal need appears to be a better understanding of the "other fellow's" problems. To get this we must first understand his functions. We must not try to perform them for him, but to dovetail our own into the whole pattern. Any advance in the efficiency of our building contracting system depends on our good relations one with another.

First I would like to discuss our relationships with architects. I have on previous occasions likened the architect to the captain of a cricket team, whilst an architect friend of mine has likened him to the conductor of an orchestra, who need not be able to play every instrument. If we pursue this simile a little further, we might find the quantity surveyor always playing second fiddle, although the choice of this instrument may seem inappropriate. We must all realise the fact that we are separate professions, interlocked perhaps, but most certainly independent. There has never been such a person as an "architect *and* quantity surveyor," and I have yet to be convinced that the architect or engineer who attempts to perform the functions of a surveyor is concened only with efficiency and with service to the client and not with financial considerations, however slight. My own efforts to design a new House of Commons would be pathetic (I am speaking of the structure and not the occupants) but I am just as certain that they could be no worse than the quantities produced by some architects.

Better Recognition

Many architects are our friends, but we have laboured under some disadvantage in the past since the distribution of patronage has been largely in the hands of the architect. We welcome signs that the architectural profession is treating us less as an appendage and more as an important element in the whole contracting scheme, and to this extent there has unquestionably been great improvement in our relationships.

In a recent issue of an architect's journal I was intrigued to see that a review of a building project included the following:—*Contractors' List*—Quantity Surveyor: Mr. Snooks; Contractors: Messrs. Crampit, etc., etc. I am quite pleased to see that Mr. Snooks, the surveyor, headed the list since he might well have been sixth or even eighth, in which case he would have followed the sub-contractor for plumbing or the sanitary fittings. The editor obviously thought this inappropriate, but we really *must* ask our architect friends to exclude us from the contracting category.

In technical journals and elsewhere we poor quantity surveyors are constantly being informed that our efficiency and energy are contributing to the slackness and shortcomings of the architects. This is a change from the former contention that we were blaming the architects for lack of information to enable us to get on with our work. There has been much loose talk regarding the shortcomings of architects in providing us with information. No good can come from making uncharitable comparisons regarding the efficiency and energy of our respective professions. Are we justified in placing on the architect all the blame for delay in preparing and carrying out a project? It would certainly assist greatly to solve our difficulties if the architect would call the quantity surveyor into consultation at a very much earlier stage in the proceedings than is customary; in fact, as soon as he has received instructions from the client. There are many matters, such as points of construction, availability of materials and local conditions, upon which the quantity surveyor can give sound advice before the working drawings stage is reached, and there need be no loss of dignity. On many occasions we find that in the early stages an approximate estimate has been given or figures arrived at of which we have no knowledge and which are rather unrealistic in the light of the tenders received. Vital changes may have been made in the scope and detail of the project, but the earlier this is established then the sooner the client can be made acquainted with the fact. Instead of keeping the surveyor in the background and perhaps regarding him merely as a necessary evil, cannot the architect give him a more prominent place in the discussions with the client? I know there is a growing tendency for architects to bring the surveyor into the meetings with the employer, but too often this does not happen until a post mortem is being held on the final accounts.

Fortunately, we are not often involved in disputes or extreme differences of opinion between client and architect. When, however, such situations do arise the surveyor must exercise the greatest diplomacy and tact, and we must always remember that, while the employer is one party to the contract, the architect is its administrating officer. If called on to give material information we must disclose it in the interests of both parties, but whatever action we take should clearly demonstrate our complete impartiality, despite the stresses of any conflicting loyalties.

I am not completely familiar with the present-day scope of architectural training, but I see no great evidence of extensive knowledge of the "commercial" side of the work, if I may so term it. The framing of contracts, the placing of sub-contracts, and the issue of variation orders are some of the important matters upon which greater stress might well be laid and more light and guidance given. For that matter the young quantity surveyor could be benefited in a like manner. We appreciate that the creative artist has neither a great deal of time nor the inclination to concern himself with mundane matters such as timber permits, licences and the written confirmation of orders, but a more general attention to the latter alone would add materially to the expectation of life of the quantity suveyor.

Threat to Independence

I am greatly concerned about our relationships with officers in the public service. There are instances where the authority does not allow letters to be issued over the signature of the chief or senior quantity surveyor. There are architects to authorities who have to issue instructions that disagree with the Practice Notes of the Joint Contracts Tribunal and the like. Conditions of this kind must have the inevitable result of robbing the quantity surveyors employed by these authorities of the last shreds of independent thought and action. The nominated or "outside" surveyor suffers in a similar manner to some degree. I believe that as nominated surveyors on works for these authorities we should claim the right to act in accordance with our experience and our consciences, and we must not be willing to accept too much dictation from the officers in the public service, for fear we lose one of our most valuable assets—our independence. To say that an architect in the local government service has a functional position and not a professional one is not the answer. Our status is similar to that of the architect in the Government and the Colonial Government Services, and surely this status can be maintained without detriment to the interests of the architects. Let us have equality of status between architect and surveyor in all branches of the public service. We have become so accustomed to direction from above—to which we submit too meekly—that we are in danger of allowing our professional judgment to be submerged by the dictates of treasurers, auditors and others who, whilst they may be steeped in financial wisdom, are not always expert interpreters of building contracts. Their opinions are seldom unanimous, in which they are not alone, and sometimes they are not helped by the terms of the contract form adopted by their authority.

There is also a movement afoot to re-establish the specification as a contract document. This raises an old bone of contention and again concerns our respective functions, for who should write the specification? We are all aware that in most cases it was written by the quantity surveyor and that, more often than not, it was a re-hash of the descriptions in the bills with locations added. But is such a document really wanted in these days of British Standards of quality and application of materials, for the bulk of description is now rightly taken care of in the bills?

The prime reason for the bill of quantities is still that it has always been, *i.e.*, to enable the contractor's estimator to arrive at his tender-offer with accuracy and speed, and to do this he wants the information ready to hand and preferably in one document. Therefore I think that all we need in the early stages of a project is a skeleton description of the materials and the vitally

necessary schedules of such things as finishings, doors and windows. While the work is in progress, these schedules are all that is required in addition to the bills, plus any other clauses having particular reference to order and location. And who is better able to prepare these than the surveyor who took the quantities? We should cease telling the contractor how to mix concrete or the best method of laying one brick upon another. He has this knowledge already; if not then his name should not be on the list of invitations to tender. I do not like the practice of providing a general specification in addition to the bills as well as a particular specification peculiar to the job.

The Faults of Clients

I think that we must take second place to the architect in our relationships with clients and in most instances our contacts with the employer must be through or with him. If we compare the efficiency of our own contracting system with that of other countries we may verify that the clients themselves are still largely responsible for the delays and high expenditure so often incurred. Our initial task lies in making it clear to the client that, having stated his wishes and requirements and appointed his professional advisers, he should leave them without interference to carry on with their already difficult task. In some new countries, architects and surveyors are together guiding the employer; and when he gets out of step they bring the matter to his notice.

It is a universally accepted maxim that the customer is always right, but we can, with advantage, point out that building is not a plastic material to be squeezed and kneaded into shape at will. Change of intention by the client is perhaps the worst element with which we have to contend in endeavouring to keep down costs, and from my experience I find that Americans have to face the same problem. We know that the presentation of accounts and statements is quite an art and requires considerable skill and experience. We all wish to present the bill to the client in the most lucid and acceptable form and in so doing we have to keep ever in mind the keen interest the contractor is also going to take in all the material facts and figures.

The method of obtaining our commissions and the initial approach to both clients and architects, are matters of great delicacy and difficulty. For the general well-being of all, it is essential that we should maintain our codes on completely ethical lines, and although we shall probably continue to obtain the bulk of our work through personal introduction, it is worth considering whether this is to remain the only main avenue of approach.

Surveyor's Functions

When a quantity surveyor is being commissioned for the first time by a client, the architect can render a considerable service by giving a clear, if concise, idea of the scope of the surveyor's functions and how they tie in with his own. It may frequently happen that the surveyor has no early opportunity to do this himself, and much subsequent embarrassment can be obviated if the client knows in advance the services covered by the various professional charges. This is even more important where committees or corporate bodies are involved. Greater difficulty arises over the settlement of accounts, and the uninformed client can be left with the impression that he is being charged twice for the same service. This is particularly unfortunate when we consider that the control of the volume of variations is not in the hands of the surveyor. Although our professional charges are our own concern and can safely be left to our own care, I think that, together with the architect, we should try to give the client a forecast of his overall commitments. But I do not like the composite scale of fees covering the preparation of bills of quantities, certificates *and* settlement of accounts.

In our relationships with the contractors, I see no good reason why a continuous state of guerrilla warfare should exist. Mr. Robert Lloyd, the leader of the Anglo-American Productivity Team, issued an appeal to architects and clients "to learn to trust your contractor." We can all support that plea and we should take the line that all contractors are to be trusted until their actions prove the contrary. I consider our duty to be as much to the contractor as to any other party to the contract, and I dislike intensely the attitude of mind which infers that the quantity surveyor should take advantage of any opportunity to withhold beneficial information from the contractor.

I would equally ask all contractors to restrain their flights of fancy and give us the facts when we ask for them in order that they may assist us to maintain our position as arbiter. Although we are trained to be coldly calculating and precise, I hope we have a spark of sympathy for the unfortunates who make losses upon contracts. It is still a never-changing source of wonder to me that, surrounded as we always are—or rather appear to be—with dozens of contractors all losing money, our contracting system is still reasonably successful. Seriously, however, we must always remember that quantity surveyors owe their continued existence to a successful contracting system.

Guidance from Contractors

I am not greatly impressed by the arguments advanced in favour of shortening quantities or the standard method of measurement by a process of "boiling down." The good bill of quantities is the one which contains all the items necessary to frame a good estimate. Alterations leading to economy in words must be welcomed by us all, but any tendency to cut out necessary information is to be deprecated. Again it is for the contractors to say whether we are giving them the assistance they require, and, if not, they must inform us of the direction in which we should move. It has been suggested that, if we all decide to "condense" our bills of quantities we shall afford greater scope to the less scrupulous contractor for the exercise of his ingenuity in finding loopholes in the bills and pegs on which to hang claims. I think that there is some danger here, and therefore we must move cautiously in any attempt to "concentrate" the items or descriptions in quantities.

The system of "open tendering" which is obligatory on many authorities may be criticised although it receives a certain measure of support. A rota system seems to have its merits, but I am aware that any proposals to form classifications or grades of contractors have met with stiff opposition mainly from the industry itself. But this remains a problem of vital concern to client, architect and quantity surveyor which still demands a solution.

I have recently visited Central and East Africa, where registration is in operation on a firm basis. I was privileged to attend meetings of a registration board, and also those of a composite society of architects and quantity surveyors. I found both of absorbing interest, and I think that we would benefit greatly from a closer liaison of the same kind. I am not advocating the formation of further societies, for we have enough bodies already. But I recommend closer links with architects and contractors, so that we may exchange views, discuss mutual problems on a personal basis, thrash out our difficulties, and even make constructive criticism of the work of the respective practitioners.

More good work could be done by the Junior Organisation discussion groups if further invitations were issued to some of the younger architects and builders. I am aware we have joint committees, liaison committees and the like, but these are mainly concerned with policy matters. We need something a little less formal if we are to exchange ideas freely.

DISCUSSION

In the discussion which followed, PROFESSOR BASIL WARD, F.R.I.B.A., said that he had found in his experience that clients were often unaware of the duties of the quantity surveyor, and as work proceeded began to associate him with high and ever-rising costs. Referring to the education of architects, he said that the majority of young men were not taught contract procedure. It was also a fact that most quantity surveyors knew very little about architecture. Members of both professions should get together, he suggested, to become better acquainted with each other's activities. The result would be invaluable.

We lived in an age, continued Professor Ward, in which the "whole man," such as Wren was, rarely appeared. We had split personalities, a split civilisation and a split culture, mainly because every class of work had its specialists. The architect, he thought, had the greatest chance of becoming the "whole man" owing to his liberal education and association with the arts.

MR. N. E. S. MORRIS, F.R.I.B.A., said he had noted that Mr. Ackland had included the contractor in his paper. The consultant engineer, he considered, might also have been mentioned, for he was a rival in taking off quantities on jobs in which, for instance, shell or pre-stressed concrete was used. It had been said that on work of this kind it was necessary for the engineer to deal with the quantities. This opinion, he thought, should be regarded as a red light. Architects, generally, were in favour of there being only one man to take off the quantities. On the value of having a specification, the speaker said he thought one was necessary because a complicated bill of quantities was difficult to decipher, not only for the architect and the clerk of works, but even more particularly for a member of the office staff who might have to deal with the contract documents.

Taking up the point about the client's relationship with the quantity surveyor, MR. K. G. BARBER said that the situation was not satisfactory, and went on to suggest a revision in the R.I.B.A. form to make the fees of the quantity surveyor payable in the same way as those of the architect.

The penalty to which the contractor is liable if he fails to complete a job in a specified time was a point raised by another speaker, who maintained that under present conditions in the industry, especially conditions relating to the supply of materials, it was impossible for the contractor to estimate accurately the length of time a job would take. If it was right that the contractor should be subjected to a penalty clause, so also, he believed, should the other parties to the contract. Referring later to the same point, Mr. Ackland said that, in his opinion, if there was to be a penalty clause there should also be a bonus clause by which the contractor would benefit if he finished the job ahead of schedule. He did not know how a penalty could be enforced on the other parties to the contract. In many instances delays occurred for which nobody could reasonably be blamed.

The question of payment for the contractor for extra costs brought about by variations and omissions was mentioned by MR. R. E. BULLOCK. The contractor, obviously, had expenses commensurate with those of the quantity surveyor, he said, but the contractor was not reimbursed. It was necessary, therefore, for him to cover himself in the original tender.

COLOUR PLANNING

Its Use in Industry

CONSIDERABLY better effects could have been achieved in many new buildings if the architects had sought the advice of an authority on the use of colour, in the opinion of MR. S. A. WOOD, chief colour adviser to Imperial Chemical Industries, Ltd. (Paints Division). Mr. Wood, on behalf of I.C.I., has carried out a thorough investigation into the theories of colour planning and has studied particularly closely the application of colour in many types of industrial premises.

A colour service studio is in operation at Slough, where a team of colour designers is available to offer free advice on suitable colour schemes for buildings of every kind. During a visit to the studio arranged recently for representatives of the technical Press, Mr. Wood pointed out some of the difficulties which confront the colour designer.

"Colour planning," he said, "is still in its infancy and research is complicated by such factors as the changes in the appearance of colours under different types of lighting; the infinite array of proportions in which the tremendous range of recognisably different colours can be combined; the many shapes to which they can be applied and the innumerable subtle differences introduced by light and shade and texture. And, probably the biggest obstacle of all, the fact that we do not know how the eye distinguishes one colour from another or whether the colour sensations stimulated in one person are the same as in another.

"The complex nature of these factors means that experiments must be limited to the simplest studies which form an infinitesimal part of the problem as a whole and that a number of observers must be used if such experiments are to be of value.

"Nevertheless, it is possible through experience, by observation and by using the limited fundamental knowledge to the best possible advantage, to do a great deal in improving the appearance of our everyday surroundings.

"The main principles involved in colour schemes for buildings are quite elementary but should not be deprecated because of their simplicity. Careful weighing of each in relation to diverse colour problems has made possible remarkable transformations in the interiors of buildings, particularly factories, and it is no exaggeration to say that these surprised and delighted those directly concerned. In the field of colour, as in so many other fields, the true answer is often the simple answer."

The sole aim of the I.C.I. colour service in advising on the decoration of any building is to provide the most satisfactory result obtainable. Proposed colour schemes are submitted in the form of coloured drawings, colour folders, panels and models. Drawings, in perspective, or where appropriate in elevation, are prepared for the more important projects and for colour proposals which are to be placed before committees.

The simplest form of presentation is the colour folders which show colour slips, approximately related in size to the proportion in which it is suggested each colour should be used. The position in which the colours are to be applied is indicated together with the description and reference number of the colours put forward. These folders have been designed for quick assembly so making it possible to cope with the quite considerable number of enquiries received.

Panels are provided either to show larger colour specimens than those which appear in the published colour ranges or to represent, in miniature, a section of one of the walls finished in the actual material recommended.

BUILDING AND REARMAMENT

"Key Position of Quantity Surveyors"

THE great responsibility resting upon quantity surveyors at a time when new houses, factories and other works must be built if the rearmament programme was to succeed, was emphasised by MR. ALFRED BOSSOM, M.P., F.R.I.B.A., at the annual dinner and dance of the Institute of Quantity Surveyors in London on March 16.

Mr. Bossom, who was proposing the toast of the Institute, said that the nation was reaching its financial limit, and architects needed the advice of quantity surveyors on how the new houses, factories and hostels for workers that rearmament would require could be built in the most economical and speedy way, where and what materials were available, and how best they could be assembled. The importance of their work as quantity surveyors was such that they might well be the key to opening the door to a peaceful solution of the difficulties that beset the nation at the present time.

MR. J. GREGG, the president, who responded to Mr. Bossom, appealed to quantity surveyors not to be bashful about their work. They controlled the finance of construction and therefore the finance of the whole building industry. They were also the people to explain what could be done within licence limits, thus "saving architects from going into court."

The toast of "The Guests" was proposed by MR. JOSEPH BABBS, F.I.Q.S., A.I.A.S., who suggested that it was time that the Minister gave thought to raising the present £100 licence limit; what an encouragement it would be if the limit was raised to £200.

Mr. S. Sutcliffe, F.R.I.C.S., president of the Valuers' Institution, responded.

A CENTURY OF BRITISH DESIGN

Mr. Paul Reilly at the Royal Society of Arts

A PAPER on "1851-1951: A Century of British Design," was given by MR. PAUL REILLY, B.A., Chief Information Officer, Council of Industrial Design, at the Royal Society of Arts, London, on March 14. Mr. Ernest W. Goodall, C.B.E., chairman of the Council, was in the chair.

In the course of his address Mr. Reilly said that the whole concept of progress involved, to some extent, the idea of consistent development or at least of a pattern of purpose which could be traced through the years. Yet the most marked characteristic of British design during the last hundred years seemed at first glance to have been its infuriating inconsistency. Indeed, the only consistency which stood out clearly was that of precept. From the very beginning of our period until the present time men of good will had consistently used almost identical words of advice or of criticism to advocate or condemn utterly dissimilar standards and achievements. There was, though, one other constant throughout the period which any lecturer on this subject, in this place and at this point in history, must notice, and that was the steady devotion that the Royal Society of Arts had given to design in industry.

After tracing the history of design in the period under review, Mr. Reilly went on: "As we look back over the centuries we can, I am sure, discern the common constant which has produced the best designs in each generation. We can say with certainty that what captures the interest or imagination of its time causes the greatest honesty in design, whether we are thinking of Gothic cathedrals, Tudor palaces, Georgian country mansions or even jet propelled missiles. So our exercise to-day in reviewing progress during the last hundred years is to identify the stimulus which has produced the best designs, and I think we can find it right at the beginning of our period in the words of the Prince Consort at the Lord Mayor's banquet to launch the 1851 Exhibition: 'I conceive it,' he said, 'to be the duty of every educated person closely to watch and study the time in which he lives. Nobody will doubt for a moment that we are living at a period of most wonderful transition. The distances which separated the different nations and parts of the globe are gradually vanishing before the achievements of modern invention and we can traverse them with incredible speed.'

"There are more lessons than meet the eye in that short extract from Prince Albert's remarkable address. 'Never lose sight of the time in which you live' is sound advice which is rarely followed; the design failures of the nineteenth century, and, indeed, of the twentieth, are almost all traceable to our not following that advice. The academic parade of galvanised corpses that has so long passed for architecture; the timid reverence for tradition that has hobbled the technical brilliance of electric lighting; the Jacobean gout in our table legs; and the Tudor Tavern *faux pas* of our British Railways are all the result of our not studying our own times. Our passion for pretending to be living in any age but our own may one day even discredit the fine examples which we try to copy. The latest folly in this direc-

tion, which was recently reported, without a hint of criticism, by a national newspaper, is the production of what is called 'distressed furniture.' And here I quote from the report: 'Distressed furniture is made from new wood treated to give it the honourable look of antiquity. Until recently this was a fairly costly process which only craftsmen in reproduction attempted. But now mass production firms have found ways in which it can be done cheaply . . . the basis of the method is a finely sprayed-on smoky veneer and then mechanical polishing and buffing with wax and pumice powder.' And so we go on, fumbling and faking, insulting the skills of our ancestors and abusing our own invention. In the days when the ice was perhaps a little thicker under his feet, Mr. Gordon Russell stamped firmly on this kind of foolishness. 'Are we to admire things,' he asked, 'because they are beautiful or because they are old? The doctrine that nothing is beautiful unless it is old has created an army of swindlers, whose artful work may in time even bring discredit on the lovely craftsmanship which they attempt to imitate.'

"But equally our successes have occurred whenever we have kept our eye on the ball. It is no accident that our ship design has seldom looked backwards or that our best architecture to-day is to be found in the new schools and factories—for all these are vital in the contemporary scheme of things. Indeed, we can apply this yardstick all along the line of our present-day production; it explains the surefootedness of our designers of precise engineering equipment, of electric irons or kitchen cookers and equally the stumbling gait of our designers of ornamental knick-knacks. It explains, too, the hesitation of our Royal Designers for Industry over the problem of designing twentieth-century thrones for the Royal Suite on the South Bank—a hesitation that casts no reflection on monarchy but rather proves that the Crown has moved with the times.

Concept of Mobility

"Prince Albert also identified the one development which more than any other was going to colour the century to come, though it cannot be claimed for him that he foresaw that it would produce the highest standards of design. And yet, looking back over the last hundred years, there can be little doubt that the most honest and lasting designs have been by-products of the idea of transport, of travel, of speed or more generally of mobility. I prefer the word mobility, because it carries with it the related ideas of lightness, flexibility, portability and even of transience, economy and modesty, all of which I believe have occasioned better standards of design in our age than have their opposites. Reaction and failure have usually occurred where we have searched for stability or strained after continuity or tradition or the appearance of permanence. After a hundred years we are still as satisfied with the light, transportable construction of the Crystal Palace as we are dissatisfied with the monumental masonry of most of its contemporaries. If the Crystal Palace did inaugurate the new style of architecture, as Thomas Harris forecast in 1862, and as many authorities have since maintained, the reason was not only because it employed new materials and new methods of construction, but because it projected the spirit of the century in its lightness, its mobility and even in its temporary nature. In fact, Professor Pevsner has suggested that Paxton would not have been so daring had he not been working on a temporary building, so perhaps the idea of transience was even then influencing design.

"Now it may sound absurd to suggest that mobility, with its various attributes, was the inspiration for design in a period so solid and seemingly immutable as the nineteenth century, but the fact remains that of all the Victorian architectural and engineering landmarks those that have best stood the test of time are the early railway constructions, the bridges and viaducts and the cast-iron vaults of the stations—all of them the expression of intense public interest in mobility; and it was no coincidence that the nearer you get to the trains the more honest the standard of design, while the more stationary you became in the terminus hotels the more meretricious were your surroundings. And though Sir George Gilbert Scott could say of suspension bridges that 'it would puzzle the most ingenious bungler to render them unpleasing,' the reason for their excellence was not a dearth of bunglers but that their development came at a time of profound pride and interest in all questions of transport and communications.

Graceful Ships

"One of the finest design achievements at the end of the century was the building of the great and graceful transatlantic liners, but these, too, were marred by the same sort of conflict that divided the railway hotels from their station vaults; the design of the interiors was no match for the design of the hulls, for somewhere between the two the idea of mobility had been discarded. The great service that Sir Colin Anderson and the Orient Line are doing for ship design to-day is to translate this sense of mobility into the interior furnishings of their liners. The best twentieth century example of mobility influencing purity of design is, of course, the aeroplane, and it is noticeable that, because this form of travel has currently captured public imagination, decent standards of design are widely spread through all activities connected with air transport, from the travel brochures to the furnishings of the booking offices and the minor equipment of the 'planes themselves.

"Mobility itself is clearly not enough to ensure high standards; there must be a lively enthusiasm for the product or the service offered. I believe that motor-car design was never better than in the vintage years of the 'twenties, when motoring had ceased to be the eccentric pastime of the few, but before it had become the universally accepted and therefore uninteresting means of getting about; the less attention the public pays to motoring the more hectoring becomes the design of motor-cars. Similarly, the heyday of railway engine design was probably somewhere between the immature Rocket and the overblown Streamliner, when the railway service was the pride of the country."

Mr. Reilly said that in his concept of mobility he did not need to put too much emphasis on actual physical movement; there were other aspects of mobility, such as lightness and portability. Another extension of the idea of mobility in building was the ever-increasing ambition to span great spaces with the least possible weight of walls and ceilings. Professor Pevsner had compared the figures for the cupola of the great hall at the Breslau Exhibition in 1910 with those of the dome of St. Peter's. At Rome some 5,000 sq. ft. were covered by some 10,000 tons of masonry; at Breslau 20,000 sq. ft. were covered by 4,000 tons of concrete; but to-day on the South Bank we could see an area of 100,000 sq. ft. covered by only 330 tons of metal. There could be no doubt that the sense of mobility, with its allied qualities of lightness, economy and transience, had greatly influenced architectural thought.

Mr. Reilly concluded by saying that we were entering a period of patronage such as had not been seen since the eighteenth century. There was to-day more power in fewer hands for influencing taste and design than at any time in our history. "If the great captains of industry and the governors of our nationalised undertakings will have the *nous*, energy and discrimination to treat design as a responsibility of top management; to treat it as a topical issue, not an antiquarian study; to keep their eyes on mobility, lightness, flexibility, economy and modesty; to turn their backs on the pompous, the monumental and the vainglorious; if they will make a virtue of the speed and transience of modern living and be masters of it, they will have a good chance in this second half of the twentieth century to create a living tradition of British Design."

R.I.B.A.

Notes from Council Minutes

FOLLOWING are notes from the minutes of the Council meeting of the R.I.B.A. held on March 6.

Ministry of Local Government and Planning Housing Medal: R.I.B.A. Members of London Regional Awards Committee.—Mr. Oswald P. Milne (F) in place of Mr. A. W. Kenyon (F).

Direct Election to the Fellowship.—By a unanimous resolution the following were elected to the Fellowship under the provisions of the Supplemental Charter of 1925, Section IV, Clause 4: Mr. Harold Morton Cook, past president of the Queensland Chapter, R.A.I.A.; Professor Robert Percy Cummings (A), past president of the Queensland Chapter, R.A.I.A.; Mr. Robert Snowden Demaine, past president of the Royal Victorian Institute of Architects; Mr. Charles William Thomas Fulton, past president of the Queensland Chapter, R.A.I.A.; Mr. Thomas Brenan Femister Gargett, past president of the Queensland Chapter, R.A.I.A.; Mr. William Purves Race Godfrey, past president of the Royal Victorian Institute of Architects; Mr. Edward James Archibald Weller, past president of the Queensland Chapter, R.A.I.A.; Mr. John Roxburgh Smith, F.R.A.I.C., R.C.A., president of the Royal Architectural Institute of Canada.

Taxation treatment of provisions for retirement.—The Council approved a memorandum of evidence prepared by the Practice Committee for submission to the committee under the chairmanship of Mr. J. Millard Tucker, K.C., which is studying the taxation treatment of provisions for retirement. The substance of the memorandum was to the effect that as a minimum measure of justice, principals and partners in private practice should be given income tax concessions on sums contributed towards pension provision on the same conditions as are at present allowed for salaried assistants.

LAW REPORTS

Builder's Successful Claim

KING'S BENCH DIVISION
BEFORE MR. JUSTICE SLADE

Hunter v. Agadjanoff

A £150 15s. claim by Mr. Joseph Hunter, builder, of Aldbourne-road, Shepherds Bush, W., for repairs carried out at 21, Shirland-road, Paddington, leasehold property owned by the defendant, Mr. Zabiolla Agadjanoff, a Persian, who conducted his own defence, came before Mr. Justice Slade in the King's Bench Division on March 12.

Mr. H. S. Ruttle, for Mr. Hunter, said the defence was that the work was never ordered; alternatively, that Mr. Hunter, having performed work in excess of that authorised by the Defence Regulations without previously obtaining a licence for that purpose, the cost was irrecoverable.

No. 21, Shirland-road consisted of a basement and ground, first and top floors. Each of the floors was let separately. A licence was obtained, but after the work was done. Counsel contended that under the Control of Building Operations Order, 1950, the "free" allowance of £100 was effective for each of the separate entities as well as the communal part of the house.

Cost of the work was divided as follows: Top floor £33; first floor £31; communal part of the house (the roof, staircase and hall) £86; there being no repairs to the basement or ground floor, so that the amount claimed was more than covered by the free allowance.

Mr. Ruttle said the defendant had been served with certain sanitary notices in respect of the property and later received two summonses to appear at Marylebone police court by reason of his non-compliance with them. Both summonses were for hearing on October 5, 1950. At the end of September he asked Mr. Hunter to carry out the work necessary and it was started on October 4 and completed on October 27. The work done was entirely that set out in the sanitary notices except for the rebuilding of a chimney.

Giving judgment, Mr. Justice Slade said the defendant contended that he asked Mr. Hunter to submit a written estimate to him of how much it would cost to execute the Paddington Borough Council's minimum requirements, and this estimate was not delivered. Mr. Hunter said nothing was said at any time about an estimate or specification and, remarked his lordship, he had no hesitation in accepting his evidence wherever it differed from that of Mr. Agadjanoff. He found that the work was done to the defendant's order and the amount claimed was a reasonable charge.

In his view the second defence did not succeed. The evidence was uncontradicted that whether these premises were or were not constructed for separate occupation, they were at all material times separately occupied by four different tenants. Counsel for the plaintiff relied upon the Order made under the authority of the proviso to Sub-regulation 2 of Regulation 56 (a) of the Defence Regulations, 1939.

Emphasising the words "any person may carry out on any single property" and then the definition of property which in substance said that any portion of a building *de facto* separately occupied should be deemed to be a separate property, "as also shall any part of the building which is not separately occupied," his lordship construed that to mean that in the case of these premises any person might spend £100 on any or all of the four parts separately occupied, and also £100 on the balance of the building. He therefore found that the Order exonerated Mr. Hunter from the requirements of Sub-Regulation 2 in relation to the expenditure of this sum.

Judgment was entered for Mr. Hunter for £150 15s., with costs.

Workman's Death at Bankside Power Station

KING'S BENCH DIVISION
BEFORE MR. JUSTICE LLOYD-JACOB

McNicholas v. Sir Robert McAlpine and Sons

MR. JUSTICE LLOYD-JACOB held in the King's Bench Division on March 12 that a working platform from which a timberman fell to his death during pile-driving operations at the Bankside Power Station site, London, in August, 1949, did not come within the scope of the Building Regulations, 1948.

He was giving a judgment in which he awarded £1,818, with costs, against Sir Robert McAlpine and Sons, Ltd., of Park-lane, W., to Mrs. Mary Elizabeth McNicholas, of Canal-street, Newry, Co. Down, in respect of the death of her husband, John, who was employed as a timberman.

Mr. Justice Lloyd-Jacob said the deceased fell from two guide timbers on which he was standing when one of them was struck by a descending pile.

Dealing with an alleged breach of Regulation 2 (1) of the Building Regulations, 1948, his lordship said the piling was intended to form a retaining wall to extend round the periphery of an excavated space wherein a steel oil tank was to be constructed.

Neither a building nor the foundation of a building was in process of construction. Even if it were possible to hold otherwise, the specific exclusion of reservoirs would exclude the application of the Regulations to works of an engineering character designed to provide for liquid storage. Had the position been otherwise, it was plain that the guide timbers would constitute a scaffold within Regulation 3. There was accordingly no breach of statutory duty, but at common law it was the plain duty of the employers to ensure that after a workman had removed a cross-timber, no movement of the pile should be permitted until he had securely established himself against the effect of vibration.

There were no handholds and no instructions were given to the men on the matter of their safety.

Someone other than the workman himself gave the signal for the release of the pile, and there was no evidence of any interval of time for the deceased to adopt a position of safety. There would accordingly be judgment against the defendants.

A stay of execution was granted pending a possible appeal.

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A NATIONAL LIBRARY

£2m. Earmarked for Site

A SUM of £2m. has been allocated provisionally for the acquisition of a site for the National Library, the scheme for which has been agreed in principle for some time, according to an entry in the Civil Estimates for the year ending March 31, 1952, Class VII (Stationery Office, 3s.). Of this, £50,000 has been earmarked for 1951-52.

The idea is that, eventually, the library of the British Museum shall be separated from the museum departments and housed in a building of its own. The site selected lies opposite the British Museum, on the south side of Great Russell-street, and is bounded on the west by Bloomsbury-street, on the south by Bloomsbury-way and New Oxford-street, and on the east by Bloomsbury-square. It is not proposed to remove St. George's Church from the block.

It is expected that it will be a number of years before building can begin and no detailed architectural or other plans have yet been drawn up.

Other Proposed Works

Other new works proposed in the Civil Estimates include £2m. for the erection of slaughterhouses (of which £300,000 is earmarked for 1951-52); £1m. for new ship and cavitation tunnel, National Physical Laboratory (£20,000); £135,000 for civil defence tactical training wing, Sunningdale Park (£56,000); and under the heading of acquisition of sites, etc., and erection of new Government offices, £10m. is required for South Bank of Thames, sites 1 and 2 (£10); and £1,465,000 for Theobalds-road (£246,600).

Estimates for proposed works overseas include £382,000 for embassy offices and staff residences, Bagdad (£20, 1951-52); £300,000 for residences for Deputy Commissioner-General and staff, Singapore (£120,000); and £750,000 for residential and office accommodation for High Commissioner, New Delhi (£5,000).

Further information on the Estimates appeared in *The Builder* of March 16.

BUILDING TEACHERS' CONFERENCE

Examination and Apprenticeship Problems

WHEN the Building Teachers' Conference met at Willesden Technical College on March 10, the chair was taken by the conference president, MR. T. E. SCOTT, C.B.E., F.R.I.B.A., who opened a discussion on "Training and Examinations for the Rank and File."

Mr. Scott said that, with the advent of day release from industry, the technical colleges were finding that the greater numbers of students coming in included a fair proportion who were not capable of absorbing instruction in the courses planned in the craft examinations run by the City and Guilds of London Institute at the Intermediate and Final stage.

He felt it was desirable that there should be some form of training planned which would lead to examinations within the reach of these students. It was desirable to retain the City and Guilds and its acknowledged standard of proficiency, but it was also necessary to cater for those youths who could not reach this standard.

MR. HARVEY G. FROST, F.I.O.B., who has recently returned from America where he has been studying the training and education of craftsmen, then spoke of conditions there.

From what he had seen of the junior schools in America it appeared that only a casual interest towards the work was shown by the pupils. There appeared to be little class teaching but greater concentration on assignment. One thing which did, however, strike him was the power of self-expression possessed by most youths at the age of 18 and onwards. At that age, Mr. Frost was of the opinion that the boys did not possess as good a general education as the boys in this country, but they appeared to be more alert to the opportunities presented to them, and to feel the urge to rise in their job.

Inducements in U.S.A.

Entry into the industry was much later than in this country; boys stayed at school until they were 16 and in many cases 18 years of age. In fact, many apprentices were married and had families whilst still learning their craft. There was thus a much greater inducement to become classified as a skilled craftsman, and it was possible for a man to have his period of apprenticeship shortened by the apprentice committee if he made great progress. All apprentices had to attend school and it was necessary to complete all the work required before they were certified as craftsmen. Because of this there was a greater desire on the part of apprentices to get good grades in class work.

An employer had the power to employ apprentices at a certain ratio to the number of skilled craftsmen he employed. If he stood off craftsmen he could, therefore, stand off the proper ratio of apprentices. The apprentice was safeguarded by the fact that he was not apprenticed to the industry but to the apprenticeship committee.

MR. J. H. MILLS, of the Amalgamated Society of Woodworkers, then spoke to the discussion. He suggested that it was now time for a committee for education in the building industry to be set up representing both sides of industry, technical colleges, the Ministries of Education, Works, Labour, etc., in order that something really concrete should be started.

The discussion was then thrown open and some important points were raised. Representatives from the City and Guilds of London Institute gave their views at some length, and these were supported by many members present.

In his summary on the discussion MR. SCOTT emphasised that he had no desire either to reduce the standard of the C. and G. or to replace their examinations by others. He did feel that we had not got to the real root of the problem, and that further thought must still be given to what appeared to him to be a really serious fault in our educational system.

Industry's Varied Structure

After lunch MR. NIGEL HANNEN, M.I.O.B., spoke on "The Functions and the Departments and Personnel of a Building Firm." He began by pointing out the great variety of types of building firms in existence in this country, from the one man jobbing firm to the extremely large firms capable of handling any contract either at home or abroad. Although these were so very different in structure they had the same task to perform, namely, to do a job in a satisfactory manner, at a satisfactory price to the client and with a satisfactory profit to the builder.

Mr. Hannen drew attention to the fact that a great deal of specialisation had now entered the industry and that many firms now specialised in one particular job. This had resulted in an increase in the number of sub-contractors on a job. Where a fair proportion of the work was done by one firm it was often found that within that firm there were certain sections responsible for specialist work.

Later, an opportunity was taken to inspect the plans and to look over the work in progress of construction of the new wing to the college premises.

A welcome feature of the conference was the number of representatives of outside professional bodies and institutions who attended. Any person interested in the work of the Building Teachers' Conference and who would like to attend the meetings and join in the discussions should communicate with Mr. Alfred Emms, Department of Building, The Technical College, Gravesend, Kent.

FESTIVAL TRANSPORT ARRANGEMENTS

Station Works at Key Points

SPEAKING of the arrangements made by London Transport for the Festival of Britain at a Press conference on March 15, LORD LATHAM, chairman of London Transport, said that the Executive had in hand considerable works at their railway stations to enable them to handle efficiently the increase in traffic that was anticipated. These works, he added, would be of permanent value to London travellers. Referring to Charing Cross and Waterloo Stations as the main gateways to the South Bank Exhibition, Lord Latham said, "We are doing our best to ensure that they will be worthy of the occasion."

He continued:

"At Charing Cross we are constructing two new escalators and, in addition, are constructing two new exits from the District Line, one at the east end of each platform.

"At Waterloo, a new flight of three escalators, 114 ft. long, with a total capacity of 30,000 passengers an hour, and a new booking-hall, are now approaching completion. The escalators will convey Festival visitors from the Bakerloo and Northern lines right into the South Bank Exhibition at ground level.

"Another heavily used station which will play a big part in Festival travel as an interchange point for the Festival Gardens is Sloane-square. This station, destroyed during an air-raid in 1940, is being rebuilt and its escalators restored. We have also adjusted the timing of our normal station maintenance programme so that 31 important Central Area stations will be renovated in time for the Festival.

"At Hyde Park Corner Station we are making a modest contribution to the Festival by displays of works by students of art schools in the London area, which will be exhibited in a large show-case which extends the length of the ticket hall. The displays will be varied at monthly intervals and each of them will feature work by students of one of the counties in the London area."

IN PARLIAMENT

Surrey Housing Allocations

ON March 12, MR. BOYD-CARPENTER asked the Minister of Local Government and Planning whether he had considered the representations of the Surrey County Council, dated February 8, 1951, urging allocation of a larger number of houses and greater provision for the granting of private building licences being made to local authorities; and what action he proposed to take.

MR. DALTON said a reply was sent on February 9 promising "to give consideration" to the council's resolution. Pressed for further information by MR. BOYD-CARPENTER, MR. DALTON said that if any authority could show that they could beat their allocation, he would carefully consider whether they could increase it. "If the Surrey County Council can produce such evidence I will consider it. Where an authority can show a good case for the variation of the 1-5 ratio of private building to public building I will also consider that," he added.

NEW COMPANIES

THE FOLLOWING NEW COMPANIES registered in England have been announced by Jordan and Sons, Ltd., company registration agents:

J. Cresswell, Ltd. (491382.) Regd. Feb. 9, 27, Cargo Fleet-rd., Middlesbrough, bldrs., contractors and decorators, etc. Nom. cap.: £5,000 Dirs.: J. Cresswell and Mrs. F. G. Cresswell, 54, Eastbourne-rd., Middlesbrough.

Brown Bros. (Pensby), Ltd. (491336.) Regd. Feb. 8, 437, Pensby-rd., Pensby, Wirral, bldrs. and contractors. Nom. cap.: £10,000. Dir.: T. Brown, Wychwood, Brimstage-rd., Heswall Hills, Wirral.

A. W. Leney, Ltd. (491292.) Regd. Feb. 6, bldrs., contractors and decorators. Nom. cap.: £2,000. Dir.: F. Leney, 2, The Crescent, Keymer, Sussex.

Hardy and Cairns (London), Ltd. (491268.) Regd. Feb. 5, 93, Grays Inn-rd., W.C.1, bldrs. and contractors, etc. Nom. cap.: £1,000. Sub.: E. R. Ffitch, 134, Fox-la., N.13.

R. A. Carrick (Huddersfield), Ltd. (491244.) Regd. Feb. 3, 26, Woodhouse Hill, Fartown, Huddersfield, bldrs. and contractors, etc. Nom. cap.: £4,000. Dir.: R. A. Carrick, 26, Woodhouse Hill, Fartown, Huddersfield.

E. M. Kennedy and Partners (London), Ltd. (490943.) Regd. Jan. 27, 615A, Holloway-rd., N.19. bldrs., etc. Nom. cap.: £200. Dirs.: Mrs. E. M. Kennedy and J. Kennedy, 144, Hornsey-la., N.6.

S. B. Youngs and Son (Builders), Ltd. (490967.) Regd. Jan. 27, Shaftesbury Works, Shaftesbury-rd, Romford, Essex. Nom. cap.: £2,000. Dirs.: W. J. Youngs and Mrs. M. A. Youngs, 28, Ernest-rd., Hornchurch.

W. Marsh and Son (Stockton), Ltd. (490978.) Regd. Jan. 27, joiners, carpenters, etc. Nom. cap.: £3,000. Dirs.: W. Marsh and A. Marsh, Grange, Bishopton-rd., Stockton-on-Tees.

W. Rose and Sons, Ltd. (490979.) Regd. Jan. 27, 159, Rochdale-rd., Oldham, Lancs., shop fitters, shop front constructors, etc. Nom. cap.: £5,000. Dir.: H. Rose, 297, Frederick-st., Oldham.

Frederick Gilliham (Contractors), Ltd. (490991.) Regd. Jan. 29, 88, Wanstead Park-rd., Ilford, Essex, bldrs., contractors, etc. Nom. cap.: £1,000. Dir.: F. Gilliham and Mrs. P. C. Gilliham, 88, Wanstead Park-rd., Ilford.

Maurice Hill, Ltd. (491004.) Regd. Jan. 29, 9, Idol-la., Eastcheap, E.C.3, structural engrs., genl. bldrs., etc. Nom. cap.: £25,000. Dir.: A. M. Hill, Malyons, Bury Wear-la., Buckland, nr. Buntingford.

Bartholomew, Griggs and Co., Ltd. (491044.) Regd. Jan. 31, bldrs., estate developers, etc. Nom. cap.: £3,000. Dir.: J. A. Griggs, 16, Lister-rd., E.11.

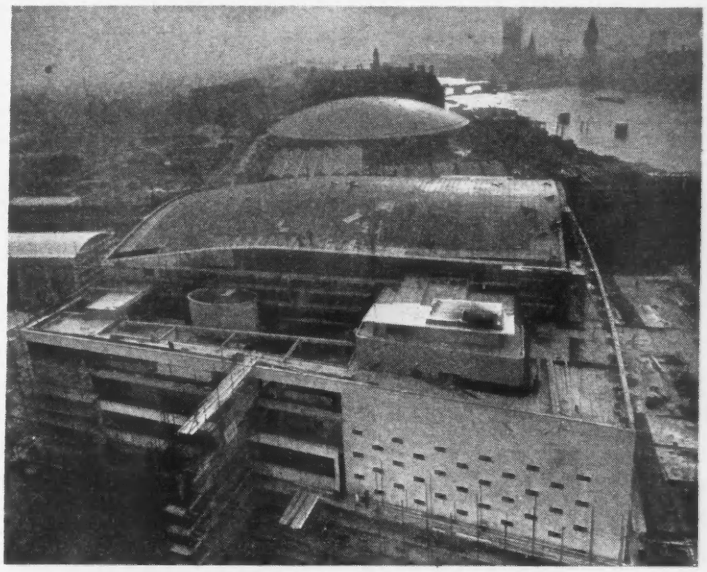
OFFICIAL NOTIFICATION

Inquiry Into Pipe Corrosion Problems

IN their Interim Report published by H.M. Stationery Office last June, the Departmental Committee on the Deterioration of Cast Iron and Spun Iron Pipes recommended to the then Minister of Health, Mr. Aneurin Bevan, either that they should remain in being so as to issue a final report, or that completion of their work should be entrusted to the Sub-Committee on Buried Metals of the Corrosion Committee set up under the ægis of the Department of Scientific and Industrial Research, the Building Research Station and the British Iron and Steel Research Association.

Mr. Bevan decided that the second alternative was preferable. He was satisfied that the Sub-Committee on Buried Metals could very well cover the field and he took into account the duplication of effort that would arise from the existence of two committees dealing with similar corrosion problems.

The Corrosion Committee have agreed that their Sub-Committee on Buried Metals will assume responsibility for continuing the work of the Departmental Committee, which has now ceased to function. The Technical Secretary to both the Corrosion Committee and the Sub-Committee on Buried Metals is Mr. E. E. White, A.R.I.C., British Iron and Steel Research Association, 11. Park-lane, London, W.1.



A picture taken from the old shot tower of work in progress on the Royal Festival Hall roof. The Dome of Discovery is in the background, with the Houses of Parliament and Big Ben on the skyline

FESTIVAL HALL ROOFING

20 Tons of Copper Used

BRITAIN will have a new landmark in course of time when the effects of the London air turn the copper roof of the Festival Concert Hall a bright green. The roof is cushion-shaped, and its peak height is 125 feet from the ground. It covers an area of more than 30,000 sq. ft., and now has a "skin" of copper sheeting, one-fiftieth of an inch thick. At present its colour is a dull brown, but within the next seven to 14 years it is expected to turn to a bright green and stay that colour for 100 years. The cost was £6,000.

The firm responsible for putting the roof on is Holloway Metal Roofs, Ltd., of London, a subsidiary of Enfield Rolling Mills, Ltd.

Despite much bad weather and with only a maximum of nine men working at any one time, the job was completed and handed over well within the stipulated time. When it was impossible for the men to work on the roof itself, they spent their time in the firm's factory making prefabricated parts.

Detail of gutter. The parapet wall and stone coping on right were subsequently covered in copper

Over 20 tons of copper sheeting were used on the roof, and more than 3,500 copper cleats were necessary to hold the sheeting in place.

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Business Efficiency Exhibition

What is believed to be the biggest efficiency exhibition ever to be staged will be opened at Olympia on June 6 by the Lord Mayor of London. The exhibition, which is being organised by the Office Appliance Trades' Association, will occupy 175,000 square feet and will be the occasion for the introduction of a host of new examples of mechanical ingenuity.

New Appointment

MR. D. R. BEVAN, Deputy Borough Engineer of Scarborough, has tendered his resignation, to become Borough Engineer of Dover.

NEWS IN BRIEF

£2,000 Towards New Premises

The appeal for £10,000 for the provision of premises for the Birmingham and Five Counties Architectural Association, which was made last May by Mr. G. Bernard Cox, President, has resulted in some £2,000 being subscribed to date. "This," Mr. Cox said recently, "will be a nest egg which will enable us to snap any suitable place without fear from where the capital is coming."

Building Employment Figures

According to the latest employment figures issued by the Ministry of Labour and National Service there was an estimated decline of 11,000 in the numbers employed in the building and contracting industries at the end of January. This figure now stands at 1,398,000 compared with 1,463,000 in the middle of 1948 and 1,424,000 at the end of 1949.

Arundel 1951 Building Programme

Arundel Town Council at its meeting recently was faced with the question whether the 18 1951 houses which it is to build in the Pearson-road should be put out to tender or should be built by the West Country firm that is already "on the spot." In the end only four members voted in favour of an amendment that the contract should be put out to tender, and the present contractor is therefore to get on with the work.

R.I.B.A. Prizes and Studentships

A list of the R.I.B.A. prizes and studentships offered for award in 1951-52 has been published in booklet form by the R.I.B.A., 66, Portland-place, W.1, price 2s. The booklet describes the conditions attaching to the various prizes and studentships as well as giving more detailed information on particular competitions, bursaries, etc. When submitting designs competitors are asked to bear in mind the needs of subsequent reproduction of their drawings.

Why Scrap is Important

The need for ample supplies of scrap—which in the trade always means iron or steel; non-ferrous metals are styled "scrap metals"—if the steel industry is to maintain supplies to consumers is emphasised in Scrap Means Steel, a booklet produced by Thos. W. Ward, Ltd., Albion Works, Sheffield. The reason why scrap is so important to industry generally is to be seen in the fact that 60 per cent. of the material used in the iron and steel industry is scrap, and the publishers accordingly appeal to all those in possession of "anything made of iron or steel which becomes worn out, unserviceable or unwanted," to assist in the scrap-recovery drive.

Health Congress

The Royal Sanitary Institute are to hold their Health Congress at Southport from April 23-27 next. A preliminary programme for the Congress has been issued by the Institute and among the papers to be read are "The Design of a Premature Baby Unit:" "The Architectural Aspect," and "The Engineering Aspect;" "The Family Unit: the Basis of Housing Design;" "The Human Element in Planning with Special Reference to New Towns;" "Recent Advances in Local Government as applied to Reconstruction and New Development;" and "Occupational Diseases of Interest to the Staff of an Engineer and Surveyor's Department." Full details can be obtained from the Institute at 90, Buckingham Palace-road, London, S.W.1.

THE DEARTH OF SKILLED CRAFTSMEN

Building Industry's Need of Young Men

ALARM at the "increasing dearth of skilled craftsmen particularly in the trowel trades, brick layers, plasterers, masons and the like," was expressed by SIR HARRY SELLEY, president of the Federation of Master Builders, in a speech at Ipswich on March 16. "You have only to look around any building site and see the great proportion of grey-heads on the job, and I am very apprehensive not only in view of the great tasks the building industry has to do in connection with the defence programme this year, but also for the future, unless young men come forward in greater numbers to enter the industry," he said.

"I want, to-day, to address an appeal firstly to master builders," he continued. "Our tradition is to train the young craftsmen. Every firm should have its full quota of apprentices, for without young men coming into the industry and receiving appropriate practical training, the building industry, as we know it, will perish. To the young people about to leave school I want to say, that apart from the material advantages to be gained from working in the building industry and they are many, there is a great team spirit among the men on the site, and the variety of jobs to be done ensures that repetitive boredom does not occur."

Finally, Sir Harry Selley appealed to the building trade unions leaders not to obstruct the agreements between the employer and his apprentices with conditions and regulations that made the employer loath to take on fresh young men.

R.I.B.A. Cricket Club

The R.I.B.A. Cricket Club have arranged the following fixtures for the coming season: Sunday, June 3, Blue Circle C.C. (A.A. Ground); Wednesday, June 27, Architectural Association (A.A. Ground); Wednesday, July 18, The Vitruvians (A.A. Ground); Wednesday, August 1, R.I.C.S. (College of Estate Management Ground, Hinckley Wood); Thursday, August 23, Club Cricket Conference (Guildford). Any member of the R.I.B.A., who is interested in the club is asked to contact the Hon. Secretary, R. R. Fairbairn, 81, Piccadilly, W.1.

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TECHNICAL EDUCATION IN BUILDING INDUSTRY

More Co-operation Needed

THE development of technical education must become an increasing responsibility of the building industry during the coming years, said MR. D. E. WOODBINE PARISH, F.I.O.B., senior vice-president of the London Master Builders' Association, at the March meeting of the South-Eastern area at Sidcup. Lt.-Col. K. J. Pearce, T.D., chairman of the area, presided.

In the past, said Mr. Woodbine Parish, there had, unfortunately, been far too much apathy towards educational matters, and in consequence progress in craft, technical and administrative training had suffered. Since the war the National Federation had done much to stimulate interest in building education, from craft training to education for higher management, but it was at local level that results were obtained, and it was therefore imperative that employers everywhere should carefully consider the issues involved so that they could contribute in full measure to the solution of the problems. The building industry was fundamentally a craft industry concerned with creative production which called for men of high character and ability, and it was towards the formation and development of character, in addition to the acquisition of technical skill, that education must be directed.

After school-leaving age education became the joint responsibility of parent, educationist and employer. Each had an important and complementary part to play in the development of a youth, but it was useless if each laboured separately and took no part or interest in the work of the others.

The L.M.B.A. was actively engaged with the unions and foremen's associations in strengthening the liaison in the London region between the industry and the educationists, including the newly-appointed youth employment officers, with a view to facilitating the recruitment of suitable and sufficient entrants for the industry and ensuring that appropriate vacancies were available when required for all those who wished to take up building as a career.

All these matters required vision, loyalty and active participation on the part of all responsible employers. Without the full co-operation of every employer the industry would never achieve that standard of efficiency and balance which was necessary to ensure that the vast programme of building work now required by the country was economically carried out.

Cement Makers' Safety Competition

A safety competition open to all cement works in Great Britain and Northern Ireland has been inaugurated by the Cement Makers' Federation. This is a development of the scheme for the study of accident prevention throughout the industry. The basis of the competition is the International Frequency Rate of Accidents. Cement works are classified in divisions, and the unit in each division having the lowest frequency rate at the end of the year will be deemed the winner. Awards, which will take the form of a bronze plaque, will be made to the winners by the Cement Makers' Federation and, in addition, a perpetual Challenge Trophy will be held by the works having the lowest frequency rate of all competing units. The first awards will be made at the end of 1951, based on the returns for the year.

TRADE NEWS

Cleaning Aluminium

Methods of cleaning different types of aluminium surfaces are fully described in Information Sheet No. 58, The Cleaning of Aluminium, issued by the British Aluminium Co., Ltd., Salisbury House, London Wall, E.C.2.

Building Maintenance Problems

The prevention of rust in water tanks, stripping of painted surfaces and air-raid shelters and the atom bomb are some of the subjects examined in the January issue of "Building Topics," a publication devoted to the protection and maintenance of buildings and obtainable from Tretol, Ltd., 12-14, North End-road, N.W.11.

New Emulsion Paint

The performance of a new type of paint, containing a plastic resin in emulsified form in place of the usual drying oils, is described in detail in a booklet on Nic-O-Loid Emulsion Paint, published by the makers, Nicholls and Clarke, Ltd., Niclar House, E.1. The paint is quick drying, and may be applied to a wide range of surfaces and materials, and dries with a matt finish.

Tiling in Post-War Schools

Some striking examples of the use of different types of tiles in schools built since the war are illustrated in "The Carter Quarterly," issued by Carter and Co., Ltd., London and Poole. The hard-wearing, easily cleaned properties of tiles make them particularly suitable for use in schools, and the wide range of colours now available increases their attractiveness for this purpose.

An Annual Report

The annual report of Messrs. Boulton and Paul, Ltd., of Norwich, shows that the group have had a particularly good year in the structural engineering department. Factories and office blocks, warehouses and stores, garages and schools are included in the work at home, and among export orders that for the briqueting plant at Morwell, Victoria, a project for utilising brown coal in Australian industry, is particularly interesting. Their agricultural buildings have retained their popularity, and the subsidiary at Melton Mowbray, the Midland Woodworking Co., Ltd., has maintained the output of high-class joinery for the building trade.

Group profits for the year amounted to £203,534, compared with £155,382 for the previous year.

Asbestos Board

The Cape Asbestos Co., Ltd., 114, Park-street, London, W.1, have informed us of some new uses which have recently been found for Pluto-Board, one of their products. This board is bonded under pressure with a thermo-synthetic resin, which, it is claimed, renders it absolutely inert and proof against warping and waving. One of the uses is for shuttering concrete and for pre-cast work, where the qualities of the board enable large-size shutters to be used and consequently increase the height of the lift. It can also be used for balcony wall panelling, cupboard doors, roofing strips, table and bench tops and partitioning. Two uses are as surrounds for gas-fires, and as heating panel units. For this last purpose the electric element is pressed between the Pluto-Board sheets during the manufacturing process, and when connected the panel is claimed to maintain a considerable and constant heat.

THE SCOTTISH BUILDER

NEW BUILDINGS

Fife.—E.C. propose new aluminium building and conversion of the jun. sec. school at Burntisland.

Perthshire.—C.C. are to erect two-apartment houses for aged persons at Bridge of Earn, Errol, Luncarty, Blair Atholl and Thornhill.

Saltcoats.—T.C. have received an additional allocation of 106 houses.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

MARCH 30.

***†Southampton C.B.**—Seven Quonset Hut classrooms at Tauntons School. Boro' A., Civic Centre. Dep. £1 1s. Tenders by April 16.

***Wath-upon-Dearne U.D.C.**—32 dwellings at Campsall Field, contract No. 24. E. & S., Town Hall. Dep. £3 3s.

MARCH 31.

***†Chichester T.C.**—Construction of accommodation, sale ring, etc., at Chichester Market. City S., "Greyfriars," North-st.

***†Chichester T.C.**—Public convenience at St. Martin's-st. City S. Dep. £2 2s.

***†Essex C.C.**—Internal renovations and repairs at Sec. Mod. Sch., Wantz-rd., Maldon. County A.

***†Essex C.C.**—House for Deputy Fire Brigade Officer at Fire Brigade Headquarters, Rayleigh-rd., Hulton. County A.

***†Malden and Coombe T.C.**—14 houses at Maldon-way (south side), east of Malden-rd. B.E., Municipal Offices.

***†Northampton C.B.**—22 old persons' bungalows at "Sunnyside," Harborough-rd. Boro' A., Guildhall. Dep. £2 2s. Tenders by April 23.

APRIL 2.

***Widnes T.C.**—Sanitary accommodation and sewage disposal scheme at Netherley. Boro' A., Brendon House, Widnes-rd. Dep. £1 1s.

***†Wolverhampton C.B.**—Eight blocks of three-storey maisonettes at Castlecroft (Tettenhall No. 2 site). Dep. £5 5s.

APRIL 3.

***†Surrey C.C.**—Adaptations at "Bradshalgh," Gong Hill, Frensham. County A., County Hall.

***†West Sussex C.C.**—Adaptations to existing property to provide home for aged persons at "Little Paddocks," Ifield, near Crawley. County A., Chichester. Tenders by April 13.

APRIL 4.

***Leyton Boro'.**—Additional classrooms, Cann Hall-rd. and Church-rd. primary schools. B.E. & S. Dep. £2.

***†Norfolk E.C.**—Three temporary timber hutted classrooms, etc., at County Primary School, Wrexham. G. W. Oak (A.), A.M.T.P.I., Ed. Architect, Stracey-rd., Norwich. Dep. £2.

***St. Marylebone B.C.**—Applications invited from builders for inclusion on list of approved contractors for erection of blocks of flats in 1951. Housing Director, 128-134, Baker-st., W.1. (Above date for return of forms.)

APRIL 6.

***Durham County Police Authority.**—Two pairs of police houses at West Lea, Seaham. County A., Court-la.

***†East Suffolk E.C.**—New primary school at Mellis, nr. Eye. E. J. Symcox (F.), County A., County Hall, Ipswich. Dep. £2 2s. Tenders by May 11.

***Luton T.C.**—Partial demolition of Corn Exchange. B.E., Town Hall. Dep. £2 2s.

APRIL 7.

***†Peterborough T.C.**—76 houses at Eastfield estate. City E. & S., Town Hall. Dep. £2 2s. Tenders by April 30.

APRIL 9.

***Wrexham E.C.**—Extensions to public library. B.E. & S., 31, Chester-st. Dep. £2 2s.

APRIL 10.

***Brighton C.B.**—Ambulance H.Q., Brighton General Hospital, Elm-gr. B.E. & S., 26-30, King's-rd. Dep. £2 2s.

APRIL 11.

***Wandsworth B.C.**—Public convenience at Gracefield-gdns. B.E., S. and Architect. Dep. £2.

APRIL 14.

***March U.D.C.**—Seven old folks' bungalows at Westwood-ave./St. Mary's-dr. W. S. Pickett, M.Inst.R.A., Town Hall. Dep. £2 2s.

***Sturminster R.D.C.**—Nine pairs of houses and four garages at Rixon, Sturminster Newton. Ronald A. Phillips & Partners (F. & A.), Bush House, 15, Christchurch-rd., Bournemouth. Dep. £1 1s.

APRIL 16.

***Chelmsford T.C.**—12 houses at Chignall estate. B.E., S. & Architect, Municipal Offices, Duke-st. Dep. £2 2s.

***Gravesend T.C.**—Rent office and flats, Sun-la. B.E. & S. Dep. £2 2s.

***Redditch U.D.C.**—20 shops and maisonettes at Batchley estate. E. & S., Council House. Dep. £5.

APRIL 17.

***Redcar T.C.**—70 houses, Lakes estate. B.E. Dep. £3 3s.

***Redcar T.C.**—Two blocks of four shops and maisonettes, Dale estate. B.E. Dep. £5 5s.

APRIL 19.

***Southend-on-Sea C.B.**—Alterations, repairs and redecorations at Crowstone House, Crowstone-ave. B.E. & S. Dep. £2.

APRIL 20.

***Bridlington T.C.**—Two blocks of 12 flats at West Hill estate. B.E., Town Hall. Dep. £5 5s.

APRIL 23.

***Langport R.D.C.**—Building for Treatment plant at Compton Durville. W. Herbert Bateman & Partners, Chesterfield House, Batheaston, Bath. Dep. £2 2s.

APRIL 24.

***Hampshire Police Authority.**—Police station and Inspector's House at Southampton-rd., Lymington. A. E. O. Geens (F.), 15, Westover-rd., Bournemouth. Dep. £1 1s. each, payable to Treasurer of Hampshire Police Fund.

APRIL 28.

***Aldridge U.D.C.**—30 houses and 8 bungalows, King's-rd., Rushall. T. H. Partridge, Clerk. Dep. £2 2s.

NO DATE.

***Basingstoke Boro'.**—30 dwellings, South Ham site. B.S. Dep. £2 2s.

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APRIL 4.

***Bootle C. B.**—Heating and hot water installation at County Sec. Sch. for Boys, Fernhill-rd. B.S.

APRIL 6.

***Chertsey U.D.C.**—External painting 84 houses. E. & S.

APRIL 11.

***†Isle of Ely C.C.**—Heating and hot-water installation at Primary Sch., Leverington-rd., Wisbech. County A., County Hall. March. Dep. £2 2s.

ROADS, SEWERAGE AND WATER WORKS

APRIL 13.

***Woking U.D.C.**—Making up of Princess-rd. E. & S., Council Offices. Dep. £2 2s.

GENERAL BUILDING WORK

(LONDON)

Borehamwood.—SHOPPING CENTRE.—L.C.C. Housing Com. approved plans for layout for shopping centre at Borehamwood site. Plans by Housing Architect's Dept.

Camberwell.—FLATS.—B.C. have instructed John Grey & Partner, F. & L.R.I.B.A., 56, Oakley-st., S.W.3, to submit suggested designs for flats and garages at Playfield-cres. and Lytott-gr.

Croydon.—T.A. CENTRE.—Plans by Hatchard-Smith & Bertram, F.R.I.B.A., 11, Haymarket, S.W.1, have been approved by B.C. for T.A. Centre at Sydenham-rd., for T.A. & A.F. Association.

Dagenham.—RESTAURANT.—B.C. propose to build new civic restaurant at Goresbrook. The architects are Evans, Crowe & Partners, 5, High-st., Romford. Quantity surveyors are Horace V. Langdon & Every, Kingsway House, Kingsway, W.C.2.

Finsbury.—FLATS AND SHOPS.—B.C. is expected to place contracts soon for the Old-st. housing scheme, comprising 180 flats, 12 shops and flats, etc., costing about £400,000. The architect is Joseph Emberton, F.R.I.B.A., Chantry House, Buckingham Palace-rd., S.W.1, and the quantity surveyors are Gardiner & Theobald, 24, Bedford-sq., W.C.1.

Holborn. — EXTENSION. — L.C.C. Housing Com. approved plans prepared by Architect's Dept. for extension to Bourne estate.

Islington.—SCHOOL.—L.C.C. Ed. Com. propose to erect county primary school at Highbury Quadrant.

Lewisham North.—SCHOOL.—L.C.C. Ed. Com. approved preliminary plans for country primary school at Eliot-pl. Plans by R. H. Mathew's, F.R.I.B.A., County A., County Hall.

Morden. — SHOPPING CENTRE.—L.C.C. Housing Com. propose to complete development of shopping centre at the junction of Middleton-rd. and Greenwrythe-la. on St. Helier estate. Plans by Housing Architect's Dept.

St. Marylebone.—R.C. SECONDARY SCHOOL.—L.C.C. Ed. Com. propose to acquire, on behalf of the Roman Catholic Authorities, land at Maida Vale, for R.C. secondary school. Plans by David Stokes, F.R.I.B.A., 32, Victoria-st., S.W.1.

Shoreditch.—DEVELOPMENT.—L.C.C. Housing Com. approved scheme prepared by Messrs. Arcon, F. & AA.R.I.B.A., 81, Piccadilly, W.1. for erection of 56 flats and pram sheds at Crondall-pl.

Shoreditch.—DEVELOPMENT.—L.C.C. Housing Com. propose to develop parts of Crondall-st., Crondall-pl. and Britannia-gdns. sites as extensions to Arden estate by the erection of 68 flats and 35 maisonettes. Plans by L.C.C. Housing Architect's Dept.

Southwark.—FLATS.—L.C.C. Housing Com. propose to erect 38 flats and two maisonettes at Tabard-gdns. estate. Architects are H. V. Ashley & Winton Newman, F.R.I.B.A., 3, Verulam-bldgs., Gray's Inn, W.C.1.

Upper Thames-st.—REBUILDING.—Rebuilding of three upper floors, 2a, Upper Thames-st., E.C.4, for London Investment & Mortgage Co., Ltd., 39, Moorgate, E.C.2. The architect is A. J. Fowles, F.R.I.B.A., 7, Burlescoombe-rd., Thorpe Bay, Essex.

Wandsworth and Barnes.—DEVELOPMENT.—L.C.C. Housing Com. approved development. Scheme for 183 flats and 24 maisonettes at Barn Elms Park site, prepared by R. Mountford Pigott, F.R.I.B.A., 3, Cromwell-pl., S.W.7.

Wandsworth.—FLATS.—B.C. approved plans by Boro' A. for 12 flats at Endlesham-rd.

West London. — RECONSTRUCTION.—Reconstruction of premises, 42, Hill-st., W.1, for Seaway Flats, Ltd. Plans by C. Edmund Wilford, A.R.I.B.A., Eagle House, Jermyn-st., S.W.1.

Whitehall.—OFFICES.—Modified plans have been approved by M.O.W. for new Colonial Office building, old Westminster Hospital site, Parliament-sq., S.W.1. The architects are Sir John Burnet, Tait & Partners, FF.R.I.B.A., 10, Bedford-sq., W.C.1; the heating and electrical consultants are G. H. Buckle & Partners, 2, Harrington-gdns., South Kensington, S.W.7; and the quantity surveyor is Oswald E. Parratt, F.R.I.C.S., Adelaide House, King William-st., E.C.4.

Wood Green.—ADDITION.—Phillips Bros. (Character Shoes), Ltd., propose to extend their premises, High-rd., N.22. The architects are Vine & Vine, AA.R.I.B.A., 12, Tudor-chbrs., Station-rd., N.22.

"THE BUILDER" PRICES

NUTS AND BOLTS

The maximum prices of certain types of bolts, nuts, studs, screws and rivets were increased from March 16, under an Order made by the Minister of Supply.

The Order, which consolidates the previous Control of Bolts, Nuts, etc., Orders, covers all items specified in those Orders with the exception of aircraft bolts, nuts and screws. Copies of the Order—the Bolts, Nuts. etc., Prices Order, 1951, S.I. No. 404—are obtainable from H.M. Stationery Office or through any bookseller.

(PROVINCIAL)

Abergele.—U.D.C. propose 196 houses at Sydenham-ave. site.

Alnwick.—R.D.C. to build 200 houses at Shilbottle. Surveyor, O. N. Farrell.

Ashby Woulds.—U.D.C. to erect 34 houses at Norris Hill, Moira.

Bath.—C.C. have approved plans for erection of dairy buildings for Darlington Dairy at Darlington-rd.

Belford.—R.D.C. approved plans for 18 houses at Seahouses and 14 at Burnside site.

Birkenhead.—B.C. approved plans for:—Extension to Birkenhead high school, Devonshire-pl., for Girls' Public Day School Trust; tyre factory and store, New Chester-rd. and Union-st., for G. Graves; factory at Wharf-rd., for S. L. Owens.—E.C. propose adaptation of "Menlo" as open-air special school for delicate children.

Blackpool.—B.C. approved plans for:—Buildings for speedway stadium at Preston New-rd., for J.W. Enterprises, Ltd., Highbury Stadium, Fleetwood; engineering workshop at Beverley-gr., for T. Wilkinson, 174, St. Annes-rd.; erection of building as church on northerly side of Buttermere-ave., for J. Barlow, 25, Lindsay-ave.; extensions to biscuit factory at Vicarage-rd., for Burtons Biscuits, Ltd.

Bradford.—E.C. approved new wing at St. Bedes Grammar School at £35,00.—T.C. approved erection of police traffic div. H.Q. at Bowling-rd. and Caledonia-st. at £199,000. City A., J. T. Castle.

Bradford.—City E. has prepared scheme for developing corporation markets in the area between Westgate and Darley-st.

Broomhill.—N.C.B. have presented plans to Morpeth R.D.C. for improvement of miners' houses at £24,000.

Caistor.—R.D.C. recommended to approve 16 houses and 4 bungalows at Keelby, 8 houses and 4 bungalows at Nettleton.

Carlisle.—Cumberland C.C. propose factory and hostel for blind at Petteril Bank at £24,960 and £6,476, respectively. Architect, R. Wright, 13, Castle-st., Carlisle.

Chapel-en-le-Frith.—R.D.C. propose to erect 17 houses at Charlesworth.

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Cheltenham.—Approval granted by B.C. for:—Rebuilding of waiting-hall, booking and administrative offices at St. Margaret's-rd., for Black and White Motorways, Ltd.; fruit and vegetable warehouse and offices at Grove-st., for W. D. Richards, Ltd.; extensions to laundry at Churchill-rd., for Sunshine Laundry (Cheltenham), Ltd.; extension to factory, 23/26, Worcester-st., for Cheltenham Crisp Co.

Cheltenham.—B.C. approved plans by L. W. Barnard & Partners, F.R.I.B.A., 13, Imperial-sq., Cheltenham, for 206 flats at Arle estate.

Cheltenham.—B.C. approved plan for 30 Cornish Unit houses at Wordsworth-ave.

Cheshire.—C.C. propose extensions to Nantwich and Acton Grammar Schs.

Chester.—Plans for rebuilding of part of Snuff Mill, Handbridge, for Thomas Nicholls & Co., were approved by T.C.

Chester.—R.D.C. seek loan of £12,056 for nine houses at Backford.—M.O.H. approved extension of present contract for further 36 and 34 houses at Saughall.

Chesterfield.—E.C. propose additional classrooms at Tapton House Sch.

Chesterfield.—M.O.W. propose automatic telephone exchange at Brookside.

Clitheroe.—T.C. approved layout for 44 "Gregory" flats at Low Moor.

Clitheroe.—R.D.C. recommended to approve layout for Bowland-with-Leagram housing scheme.

Corby.—New Town Development Corpn. have purchased Fineshade Abbey for adaptation as offices.

Coventry.—Coventry Masonic Memorial Temple, Ltd., propose new Masonic temple at Radford-rd. at £50 60,000.

Crayford.—Further sections of large factory, offices, etc., to be put in hand for Federick Braby & Co., Ltd., Euston-rd., N.W.1.—H. Courtenay Constantine (F.), 32, Oldbury-pl., W.1, and Arthur A. Stewart (F.), 28, West-st., Marlow, and 6, Cromwell-pl., S. Kensington, S.W.7, associated architects (amended paragraph).

Darlington.—T.C. has received sanction to borrow £50,600 for 34 houses and six bungalows at Haughton North and South; £46,472 for 40 houses at Haughton South.—M.O.L.G. & P. sanction is being sought to borrow £40,282 for 36 flats at Haughton South and £18,490 for 14 houses at Haughton South.—Boro' A. (E. A. Tornsohm) has been asked to prepare sketch plan for short-stay home in grounds of Park View.

Eston (Yorks).—Architect for proposed temporary public-house in Birchington-av., Grangetown, is B. Wilson, L.R.I.B.A., High-st., Tadcaster.

Felling-on-Tyne.—Plans have been approved for extending factory in Abbotsford-rd. for Stoneygate Flooring Co., Ltd. Architect, E. M. Lawson, Barras-bldgs., Barras Bridge, Newcastle-on-Tyne.

Gateshead.—Mackley's Pumps Co., Ltd., Gateshead, is to build offices and a garage in Hawks-rd. Architect, C. S. Errington, 46, Grainger-st., Newcastle.

Gateshead.—E. M. Lawson, Barras-bldgs., Barras Bridge, Newcastle-on-Tyne, is architect for licensed premises in Split Crow-rd. for A. Arrol & Sons, Ltd.—James Deuchar, Ltd., Eldon-sq., Newcastle-on-Tyne, are to erect hotel in Park-rd. to plans by Hetherington & Wilson, County-chbrs., Westgate-rd., Newcastle-on-Tyne.—T.C. has decided that plans for alterations to blocks "Beechwood," "Ashwood" and "Oakwood," Fountain View, should be prepared by Chief A. of Corpn. (H. J Cook) instead of by private architects as originally proposed.

Grange.—U.D.C seek loan of £10,802 for eight houses at Fell-cl. site.

Kettering.—Oxford Reg. Hospital Board recommend to approve modernisation of laundry at St. Mary's Hospital at £13,000.

Leicester.—T.C. propose to build 388 flats at New Parks at cost of £658,000 and 400 "Easiform" houses on Eyres Monsell estate.

Leyland.—U.D.C. propose negotiating contract for erection of 40 "Gregory" flats.

Liverpool.—Ed. Com. propose to erect county college at Childwall Hall site.

Liverpool.—T.C. approved layout of R.E.M.E. depot at Deysbrook-la.

Liverpool.—T.C. have accepted layout for proposed north 'bus terminal at Pier Head.

Lunesdale.—R.D.C. to erect 14 houses and two shops at Caton and eight houses at Halton.

Manchester.—T.C. to erect 80 houses at Newall Green at cost of £96,100.

Newcastle-on-Tyne.—T.C. is being recommended to erect small blocks of flats on various sites.

Nottingham.—T.C. to acquire, by purchase, land on south side of Arnold-rd. for 166 houses and 11 garages.

Nuneaton.—T.C. recommended to approve extensions to factory at Caldwell-rd., for Preservation and Pre-Packing Co., Ltd., 237, Brownshill Green-rd., Coventry; laboratory, Marlborough-rd., for Courtaulds, Ltd., Foleshill-rd., Coventry.

Otley.—Fluorescent Starters, Ltd., propose erection of light industry factory at Leeds-rd. area.

Peterborough.—B.C. approved plans for a warehouse at Cripple Sidings-la. for J. Lyons & Co., Ltd., and another at Padholme-rd. for F. W. Wheatley.

Retford.—T.C. propose to erect 38 houses at Hallcroft and 44 at Whinney Moor-la.

Rothbury.—Tweedside Co-op. Society, Ltd., are to erect new business premises at Front-st., Rothbury. Reavell & Cahill, Alnwick, are architects responsible.

Sale.—B.C. approved plans for:—Extensions to synagoge at No. 8, Charlton-dr., for Sale and District Hebrew Congregation. Architect, E. Levy, 32, Deansgate, Manchester.—Cheshire E.C. propose extensions at Ashton-on-Mersey Sec. Mod. Sch. F. M. Parkes, C.A.

Scarborough.—Plans have been prepared by Wilkinson & Smith, Martins Bank-chbrs., Scarborough, for converting the Wessex Hotel into flats at about £12,000.—Wilkinson & Smith are also the architects for proposed alterations to the White Heather Laundry, Hoxton-rd.

Scarborough.—North Riding C.C. propose prim. sch. at Eastfield estate at £52,550 (1951/2 programme).

Seisdon.—R.D.C. approved 16 houses at White Hill, Kinver

Settle.—R.D.C. seek loan of £23,980 for 10 houses at Bentham and eight at Giggleswick.

Sheffield.—Reg. Hospital Brd. acquired 20-acre site at Heanor-rd., Ilkeston, for proposed hospital. E. F. Wilson, Fulwood House, Old Fulwood-rd., Sheffield, architect to Brd.

South Shields.—Housing Com. has approved a scheme for two blocks of flats in Fard.ng-sq. for single people. Architect, J. J. Reid, Boro' E.

South Shields.—Corpn. propose to carry out repairs to public baths and washhouses at £10,000. Plans by Boro' E.

Stanley (Co. Durham).—Durham C.C. are to erect police houses in Front-st., Dipton.—U.D.C. Surveyor (J. R. Heslop) has been asked to prepare plans for erection by direct labour of 24 houses at Shieldrow and 16 aged peoples' houses and 33 terrace houses at Annfield Plain.

Stockport.—B.C. approved plans for:—Extensions to sheet-metal works, John-st., for J. H. Robinson, Ltd.; extensions to machine shop, builders' and joiners' workshop, Regent-rd., for E. D. Maddocks. Stockport Industrial & Equitable Co-op. Society, Ltd., propose staff messroom, dance hall and cafe on first floor of Reddish Emporium at junction of Gainford-rd. and Gorton-rd.—J. D. Hughes (Stockport), Ltd., propose extensions to engineering workshop, Buxton-rd.

B.C. approved amended plans for 54 houses and flats at Houldsworth estate.—Propose 10 houses at Mentone-rd. and Warwick-rd.—E.C. propose prim. sch. at Canal Bridge Farm estate.

Stockton-on-Tees.—R.D.C. has approved plans for 36 houses at Greatham. Surveyor, G. W. T. Brown.

Sunderland.—W. & T. R. Milburn, 17, Fawcett-st., Sunderland, are architects for a girls' grammar school in Thornhill-ter.—Plans have been prepared by S. W. Milburn & Partners, 9, Esplanade, Sunderland, for a church in Front-rd.—J. W. Taylor & Son, St. James-bldgs., Gallowgate, Newcastle-on-Tyne, have prepared plans for garage and workshop in Sunderland-st.—E.C. is to purchase a site at Grindon for an R.C. primary junior and infants' school.

Todmorden.—B.C. approved plans for three store sheds and pattern shop at Sandholme Iron Works for Sandholme Iron Co., Ltd.

Walsall.—T.C. seek loan of £29,320 for alteration of Palace Cinema into a civic theatre.

Washington (Co. Durham).—E. M. Lawson, Barras-bldgs., Barras Bridge, Newcastle-on-Tyne, has been appointed consultant architect to U.D.C. on housing matters—U.D.C. has applied to M.O.L.G. & P. for sanction to borrow £14,520 for 12 houses at Blue House-la.

West Bromwich.—M.O.E. approved first instalment of Cty Prim. Sch. at Yew Tree estate.

Westmorland.—E.C. approved new inf. sch. at Glebe estate, Kendal.

Whitworth.—U.D.C. to erect 24 houses at Wallbank estate.

Workington.—J. Saul, Bank-chbrs., John-st., Workington, is the architect for a proposed nurses' home for Newcastle-on-Tyne Reg. Hospital Board

TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government Departments.*

Barnsley.—100 houses at Athersley estate, for T.C.: *Direct labour, £127,000.

Blackpool.—25 houses at Mereside, for T.C.: *J. Halstead, Ltd., 19, Highfield-rd., South Shore, Blackpool, £35,563.

Croydon.—Houses at New Addington estate, for C.B.: *Wates, Ltd., 1258/60, London-rd., Norbury, S.W.16, £39,354 (27); *R. Mansell, Ltd., 17/23, Grant-rd., Croydon, £44,715 (30); *Grace & Marsh, Ltd., New Bridge Works, Waddon, Croydon, £29,461 (20) (extension of present contract, subject to M.O.L.G.P. approval).

Dagenham.—Extension of factory buildings for Ford Motor Co., Ltd. *G. Percy Trentham, Ltd., Long-la., Hillingdon, Middlesex.

Darlington.—Works, for T.C. Borough Architect, E. A. Tornbohm: 36 flats, Haughton South, *Piggott Bros. & Co., Ltd., Lodge-st., Darlington; 14 houses, Haughton South, *Boddy & Bell, Thomas-st., Darlington.

Darlington.—Alterations to old female hospital at East Haven, for T.C. E. A. Tornbohm, Borough Architect: *Direct labour.

Denby Dale.—28 houses at Gilthwaites-la., for U.D.C.: *F. Potter & Son, Longman-rd., Barnsley, £32,447.

Durham.—Erection of 200 houses to accommodate miners, for R.D.C. K. G. Miller, Surveyor: *Direct labour.

Exeter.—Shops, showrooms and offices, High-st., for Montague Burton, Ltd., Hudson-rd. Mills, Leeds. Staff architect, N. Martin, A.R.I.B.A. *M. Harrison & Co., Ltd., Post Hill Quarries, Farnley, Leeds.

Exeter.—Erection of Stoke Hill junior mixed school, Exeter, for T.C. H. B. Rowe, F.R.I.B.A., A.M.I.Struct.E., City Architect, Municipal Offices: *W. E. R. Howell, Dix's Field, Exeter, £41,856.

Gateshead.—Alterations and additions to Hindley Hall, for E.C. Chief Architect, H. J. Cook, Municipal-bldgs.: *M. S. Failes, Ltd., Coatsworth-rd, Gateshead, £49,066.

Hebburn-on-Tyne.—Erection of fitting shop at Hebburn Shipyard of R. & W. Hawthorn Leslie & Co., Ltd. Plans by firm's own staff: *Cargo Fleet Iron Co., Ltd., Middlesbrough.

Hebburn-on-Tyne.—First instalment of plan for new Mid-Tyne Technical College, for Durham C.C. County Architect, G. R. Clayton, Court-la., Durham: *H. E. Pitt, Ltd., Leopold-st., Sunderland, £141,997 (in place of previous tender withdrawn).

Horden.—Additions to Hordgn Colliery county junior girls' school, for Durham C.C. County Architect, G. R. Clayton, Court-la., Durham: *R. Matthews & Co., Villiers-st., Sunderland, £6,023.

Kettering.—Conversion of sanatorium block to maternity ward at St. Mary's Hospital, for Oxford Regional Hospital Board: *A. P. Lewis & Sons, Ltd., Duke-st., Burton Latimer, £5,502.

Leeds.—Houses, for T.C.: 150 and 20 three-storey flats at Belle Isle, and 60 three-storey flats at Brooklands Seacroft: *N. B. Bell & Co., Ltd., Franklands-ter., Leeds, £213,932 and £75,100; 36 three-storey flats at Moortown: *West & Sons (Leeds), Ltd., 34, Lincoln-rd., Leeds, £44,528; 12 three-storey flats at Moortown: *W. J. Simms, Son & Cooke, Ltd., Haydn-rd., Nottingham, £15,716.

Leicester.—388 flats at Aikman-ave., New Parks estate, for T.C.: *Sherriff & Co. (1933), Ltd., Leicester.

Lichfield.—18 and 10 bungalows at Burntwood, for T.C.: *A. J. Austin, Ltd., £14,621 and £8,123 (subject to M.O.L.G. & P. approval).

London.—Factory, offices, etc., Hatfield-st. and Joan-st., S.E.1, for Copper Depositing and General Engineering, Co., Ltd., 1, Upper Ground-st., S.E.1 Ellis, Clarke & Gallanaugh, architects, 58, Grosvenor-st., W.1. *John Willmott & Sons (Hitchin), Ltd., 80, Walsworth-rd., Hitchin, Herts.

London.—Reconstruction of The Cloisters, Pump Court, Temple, E.C.4, for Hon. Society of Middle Temple. Edward Maufe, F.R.I.B.A., architect, 139, Chelsea Old Church-st., S.W.3. Franklin & Andrews, Quantity Surveyors, 25, Ludgate Hill, E.C.4. *Dove Brothers, Ltd., Cloudesley-pl., Islington, N.1.

L.C.C.—15 shops with 15 maisonettes above, 12 garages and six pram sheds at Woodberry Down estate:

Halse & Sons, Ltd., Woolwich	£69,685
Prestige & Co., Ltd., Westminster	69,416
Thos. Bates & Son, Ltd., Romford	69,335
Leslie & Co., Ltd., Kensington	69,233
Harry Neal, Ltd., St. Marylebone	68,942
W. J. Marston & Son, Ltd., Fulham	68,543
Kent & Sussex Contractors, Ltd., Westminster	68,389
Tersons, Ltd., Finsbury	67,873
Rowley Brothers, Ltd., Tottenham	67,112
Henry Kent (Builders), Ltd., Lewisham	64,873
*Sloggetts (Contractors), Ltd., Kensington	63,228

Comparable estimate of director of housing and valuer is £65,239.

Construction at Elmington estate, Camberwell, of the superstructure of two five-storey blocks (B and C), comprising 50 flats, a one-storey laundry building and 14 pram sheds:

Galbraith Bros., Ltd., Holborn	£93,979
F. & H. F. Higgs, Ltd., Lambeth	93,001
Henry Kent (Builders), Ltd., Lewisham	92,557
Geo. Parker & Sons, Ltd., Camberwell	92,544
R. Mansell, Ltd., Croydon	92,466
J. Garrett & Son, Ltd., Wandsworth	92,089
M. J. Gleeson (Contractors), Ltd., North Cheam	91,472
Kirk & Kirk, Ltd., Wandsworth	90,188
Kent and Sussex Contractors, Ltd., Westminster	89,952
H. C. Horswill, Ltd., West Ham	89,896
Gee, Walker & Slater, Ltd., Westminster	88,997
A. Roberts & Co., Ltd., Westminster	87,538
*A. T. Rowley (London), Ltd., Tottenham	87,422

Comparable estimate of appointed architects, Messrs. Stewart & Hendry, is £87,473.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended March 10:—*Erection of scaffolding*: The London & Midland Steel Scaffolding Co., Ltd., London, S.W.1. *Building work*: F. Shepherd & Sons, Ltd., York. *Painting work*: Spraycraft Co., Ltd., Bromley; G. & J. Seddon, Ltd., Little Hulton, nr. Bolton; T. E. Cundy & Son, Ltd., Leicester; G.H.L. (Painters), Ltd., Dudley; C. A. Hayes & Sons, Ltd., Bristol.

General Maintenance Work: Eric J. Robinson, Ltd., Ilford; F. Shepherd & Son, Ltd., York; Arthur J. Arnold, Ltd., Chelmsford. *Installation hot water and heating services*: G. N. Haden & Sons, London, W.C.1.

***London (M.O.W.).**—Contracts placed by M.O.W. during week ended March 10:—*Buckinghamshire*: Forest Research Laboratories, Princes Risborough, construction of wood bending laboratory, H. J. & A. Wright, Ltd., High-st., Great Missenden. *Cardiganshire*: R. A. E Aberporth, extensions and adaptations to hostel, John Morgan (Builders), Ltd., Cathedral-rd., Cardiff. *Cheshire*: Post Office Telephone Exchange, Gatley, construction of vertical extension, L. Brown & Sons, Ltd., Macclesfield-rd., Wilmslow. *Dorsetshire*: Ashmore, near Shaftesbury, erection of forestry commission houses, E. J Wilkins (Marnhull), Ltd., New-st., Marnhull, near Sturminster, Newton. *Durham*: M.N.I. Mains House, Front-st., Chester-le-Street, alterations and additions, William Norman, 3-6, West-la., Chester-le-Street. *Hampshire*: A.E.X.E., Christchurch, erection of boiler house, G. J. Furneaux, Ltd., 25, Barrack-rd., Christchurch.

Kent: Tonbridge, erection of Crown buildings, J. C. Elkington, Ltd., 14, Avebury-ave., Tonbridge. *Lancashire*: Little London Wall, Risley, erection of metallurgical laboratory, John Crosby & Sons, Ltd., Carr Wood, Hale, Cheshire. *Staffordshire*: Congregational Church and School, Bridge-st., Walsall, alterations and conversions, Perks & Gould, Ltd., Shale-st., Bilston. *Surrey*: Hare-la., Claygate, erection of telephone exchange, W. H. Gaze & Sons, Ltd., High-st., Kingston-on-Thames. *Wiltshire*: Homefield House, Polebea-rd., Trowbridge, extensions and alterations, E. J. G. Morgan, Ltd., Western Area depot, Frome-rd., Trowbridge. *Yorkshire*: Northallerton, erection of office building, Walter Thompson (Contractors), Ltd., 17, North End, Northallerton.

¶London (War Dept.).—Contracts placed by W.D. during week ended March 3:—*Gloucestershire*: Miscellaneous, W. A. James & Sons, Ltd., Gloucester. *Hants*: Painting, T. H. Kenyon & Sons, Ltd., London, W.9. *Berks*: Building, Wilson Lovatt & Sons, Ltd., Wolverhampton. *Wilts*: Painting, Sims Bros., Durrington, Wilts. *Gloucestershire*: Building, Herbert Miller & Sons (Bldg. Contrs.), Ltd., Bristol 3. *Hants*: Drainage, F. Bracey (Roads), Ltd., Watford. *Warwickshire*: Building, Hinkins & Frewin, Ltd., Banbury; Painting, Geo. Linnecor & Son, Ltd., Birmingham 6. *Surrey*: Painting, T. H. Kenyon & Sons, Ltd., London, W.9. *Essex*: Building, A. D. Jackson & Son (Contractors), Ltd., Southend-on-Sea. *Yorkshire*: Miscellaneous, F. Shepherd & Son, Ltd., York; Building, Walter G. Birch (Harrogate), Ltd., Harrogate. *Omagh*: Electrical, B. French, Ltd., Belfast.

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Antrim/Down: Miscellaneous, Cregan Brothers, Lisburn. *Glasgow:* Roadwork, Scottish Tarmacadam & Asphalt Co., Ltd., Glasgow. *Wilts:* Building, H. J. Walker & Sons, Ltd., Bristol. *Renfrewshire:* Building (Concrete), Brydon Construction Co., Ltd., Glasgow. *Yorkshire:* Building, Fowlers (Contractors), Ltd., Harrogate. Building, Walter G. Birch (Harrogate), Ltd., Harrogate. *Cheshire:* Building James Crosby & Sons, Ltd., Hale. *Glos:* Re-sheeting, J. Bowen & Sons, Ltd., Birmingham, 12. *Salop:* Roadwork, Asphalt & Public Works, Ltd., Worcester. Painting, N. S. Long, Ltd., Poulton-le-Fylde. *Dorset:* Roadwork, O. J. Elliott & Co., Ltd., Bristol, 9. *Wilts:* Construction recreation ground, Gilliam & Co., Ltd., Croydon. *Berks:* Building, George Linnecor & Son, Ltd., Birmingham, 6. *Hants:* Roadwork, British Bitumen Emulsions, Ltd., Slough.

Northampton.—Erection of 39 houses at Sunnyside for T.C. T. Wilson & Son, Ltd., £49,884.

Rothbury.—Erection of 14 houses, for R.D.C. J. M. Oliver, Surveyor: *T. Muckle & Son, Bridge-st., Rothbury, £14,462.

Salop.—Home for aged at Shrewsbury, for C.C.: *W. Higley & Son, 8, Pride Hill-chbrs., Shrewsbury, £26,642.

Scarborough.—Erection of a further 36 houses at Eastfield, for T.C. Borough Engineer, H. V. Overfield: *Michael Baum & Co., Ltd., Middlesbrough (subject to M.O.L.G. & P. approval).

Sedgley.—Shops and flats at Wood-rd., Lower Gornal, for U.D.C.: *Baker Bros., Kent-st., Upper Gornal.

Sheffield.—Works, for Regional Hospital Board. Victoria Memorial Hospital, Mansfield:—Improvements to nurses' accommodation, *R. Moore & Sons, Spencer-st., Mansfield, Notts. £9,289.

Shenley.—Extension of Harperbury Hospital, including new nurses' home and lower grade ward blocks, for North-West Metropolitan Regional Hospital Board. Chief architect, C. D. Andrews, F.R.I.B.A., Sheffield-st., Strand, W.C.2. Quantity Surveyors, Young & Brown, 104, High Holborn, W.C.1. *H. C. Janes, Ltd., 189, High Town-rd., Luton.

Shifnal.—New wing at Haughton Hall Residential School, for Salop E.C.: *McKeand Smith & Co., Ltd., Showell-rd., Bushbury-rd., Wolverhampton.

South Shields.—Extensions to the boys' high school, for E.C. Architect, J. Wilks, A.R.I.B.A., 29, King-st., South Shields: *Henderson Brothers (1936), Ltd., Tyne Dock, South Shields, £109,172 (subject to M. of E. approval).

Staffs.—Extensions at Doulton-rd. C.P. school, for C.C.: *John Dallow & Sons, Ltd., Blackheath, Birmingham, £11,448.

Stanley (Co. Durham).—Conversion of Nissen hutting at New Kyo miners' hostel into housing accommodation, for U.D.C. Surveyor, J. R. Heslop: *G. L. Currie, Balmoral-ter., Newcastle-on-Tyne, £18,360.

Stratford-on-Avon.—Adaptation of nursing home at Rother-st. as municipal office, for T.C.: *Smith & Linnet, Ltd., £7,241.

Sunderland.—Erection of 28 houses on the Hylton Bank site, for R.D.C.: *Direct labour, £34,235.

Uttoxeter.—26 houses at Bentley House estate, for U.D.C.: *O'Dair Bros., Ltd., £35,004 (subject to approval of M.O.L.G. & P.).

Walsall.—Houses, for T.C.: 26, 9 and 4, *Sir Alfred McAlpine & Son, Ltd., £32,048, £11,306 and £5,290; 34, *Rock & Downes, Ltd., Birmingham-rd., Aldridge, Staffs, £39,260; 16, *F. A. & H. Taylor, Croxstall-rd., Bloxwich.

Wellingborough.—Erection of (a) 56 houses and (b) 20 houses on Croyland Hall estate. (a) *Drabble Construction Co., £70,781. (b) *Drury & Co., Ltd., £25,252.

West Lancs.—20 houses at Cousin-la. site, Rufford, for R.D.C.: *Ernest Abram & Co., Station-rd., Banks.

Westmorland.—22 houses at Firs-rd. estate, for R.D.C.: *Ainsworths, Ltd., Kendal.

Westmorland.—Erection of Kendal-Kirkbarrow infants' school, for C.C.: *John Laing & Sons, Ltd., Dalston-rd., Carlisle, £54,512.

Wiltshire.—Alterations to the Commonweal grammar school, Swindon, for E.C.: *Clark Brothers, Swindon, £4,398.

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